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Manufacturing and Wholesale Industries of Chicago

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Manufacturing and Wholesale Industries

ILLINOIS MOULDING COMPANY

Among the well known manufacturing organizations of Chicago, this company deserves special mention as one of the recognized units of the industrial activity of the city, and also as a fitting representation of the results made possible by the industry, initiative and constructive ability of its founder.

The president of this organization, Herman Molner, was born in Madyaros, Hungary, September 29, 1866, a son of Moritz and Rosie (Huhnwald) Molner. He received the benefits of a public school education, and in early life was "bound out" as an apprentice to a manufacturer in the town of Nutra, Hungary, where he learned the trade of frame making and stained-glass work. During the period of his apprenticeship, he received no compensation save his board, such being in accordance with the custom of the times.

In 1886, then at the age of twenty years, he decided to emigrate to America, where he believed greater opportunities existed than could be found in his native land. Arriving at the port of New York, he sought and obtained employment with Evans & Co., where he worked at joining frames and setting mirror plate, receiving for the same, compensation at the rate of four dollars per week.

While residing in New York, he was united in marriage, July 15, 1889, with Sarah Mayer (now deceased), and to this union were born two children, Ritta and Belle. July 2, 1898, he married Evelyn Fleischer, and to them have been born two children, Frances and Samuel.

At a later date, Mr. Molner was employed with the Pennsylvania Railroad Company as a brakeman, which occupation he followed for a limited period, afterwards making his home in Philadelphia where he engaged at the work of wood carving.

In 1891, Mr. Molner brought his family to Chicago, and his first position in the western metropolis, which was to become his permanent home, was with the Wells Glass Company, one of the representative houses in their line at that time. Here he remained until the fall of 1894, in which year he determined to start in business for himself.

Beginning in an humble way, his first independent establishment was represented by a simple work-shop in a barn on North Carpenter street, and in which the entire operating force consisted only of himself. Six months later he was able to rent a store-room and basement on Chicago avenue near Ayers Court, and was also able to employ three helpers.

Under his efficient management, the business continued to flourish, and it was not long until another move became necessary, and this time he located at Randolph and Ann streets, where he occupied an entire floor of a building where he had about ten thousand square feet of working space, and also the additional advantage of steam power. The operating force was increased to thirty people.

The business, in the meantime, had been incorporated in 1896, as the Illinois Moulding Company, Mr. Molner having officiated from the beginning as president and treasurer, and having later acquired the interest of his former associates, and has since remained virtually the sole owner.

In the fall of the year, last above mentioned, he equipped the building—four stories and basement—on North Ann street, which had formerly been occupied by the Stern and Spiegel Furniture Company. Here he remained until 1902, when a tract of land was purchased at the corner of Western avenue and West 23rd street, and upon which he erected the buildings now occupied by the company. The plant is of modern construction and equipment; the present requirements of the business necessitating a floor space of 125,000 square feet, and giving employment to an average operating force of 225 workmen, and the annual output of the manufactured product represents a value in excess of half a million dollars.

The company maintains and operates its own lumber yard, dry kiln and all other adjuncts and facilities required for furnishing the raw product, while direct and excellent shipping facilities are supplied by a switch track connecting with the C. B. & Q. Railway.

Mr. Molner is a member of the Illinois Manufacturers' Association, the Chicago Association of Commerce, and takes an active and lively interest in all matters pertaining to the civic welfare of the city. He is a Democrat, politically, and maintains membership in the Iroquois Club and the Covenant Club, both of Chicago.

CARL A. JUDSEN

As the inventor and patentee of a most effective type of rubber hoof pads for horses and mules Mr. Judsen has conserved humanitarian progress and also been able to build up for himself a thriving and substantial industrial enterprise in the manufacturing of these admirable products, his manufacturing headquarters being established at 214 West Erie street. From a circular issued in connection with the substantial business that has been developed by Mr. Judsen are taken the following pertinent quotations: "Rubber hoof-pads have proven to be the best method of shoeing horses and mules that travel on artificial roads. Their use assures the animal surefootedness and relieves concussion. In the construction of our numerous styles of rubber pads we have tried to follow the principle of nature, giving the proper bearing where nature intended. We have also distributed the material to the places where it will give the best service both as to wear and protection. The material used in the construction of our rubber pads is positively the best adapted for that purpose, and it will be noted that our line is complete. We have rubber pads for all classes and purposes.

H. Allolver

Nail-proof pads have proved to be of great benefit to the horse. Where the animal's feet are protected by nail-proof pads there is no danger of injury from loose or rusty nails, glass, sharp stones or any similar menace which heretofore has been the cause of great expense and the loss of good horses."

The hoof-pads from this well equipped factory are made in various sizes and designs, some having backs or canvas and others of leather, and special success has attended the use of the Judsen nail-proof pads. In the establishment are manufactured also the improved tool-holder and swedge invented by Mr. Judsen for the use of blacksmiths and other forge workers, and also his attachable rasp handle. Energy and ability have been the forces that have brought prosperity to the business founded and developed by Mr. Judsen, and a brief review of his career is most consonant in this connection.

Carl A. Judsen was born in the seaport town of Aarhuus, of the Jutland district of Denmark, and the date of his nativity was August 20, 1866. In his native place he received the advantages of the common schools and there also he served a thorough apprenticeship to the trade of blacksmith, in the shop of his father, Nels Judsen, who had there been engaged in the work of this sturdy trade for the long period of forty-two years before his retirement.

In 1888, desirous of availing himself of the broader opportunities offered in the United States, Mr. Judsen came to this country and soon after his arrival in the port of New York city he made his way to Chicago. His judgment prompted him to gain initial experience in the rural districts while he was acquiring knowledge of the English language, and thus he soon found employment on a farm in Will county, Illinois, where he remained six months. He then returned to Chicago and readily found employment as a skilled horseshoer, the while he manifested his ambition and determination by attending night school, to familiarize himself more fully with the language of his adopted country. He carefully saved his earnings and finally, in 1891, he opened a blacksmith shop of his own, in an old frame building at 155 West Erie street. As an expert in the shoeing of horses he soon gained a substantial and regular supporting patronage, including a number of the largest wholesale houses on the North Side. His love for horses and interest in protecting the noble animals made his service not a mere matter of financial recompense but one of insistent desire to further the comfort of the horses brought to his shop, and appreciation of this attitude was not denied by the public. In 1900 his accumulations were sufficient to enable him to purchase a lot at 214 West Erie street and to erect thereon a substantial three-story brick building. The ground floor was equipped for his blacksmith shop and the upper floors were rented for residential purposes.

Mr. Judsen's dominating interest in the physical wellbeing and comfort of the horse led him to give much time and study to the devising of a rubber hoof-pad that should prove practically efficient, and after much experimentation he devised the pad that bears his name and upon which he received his letters of patent in the year 1902. The new device met with prompt favor when introduced to owners and users of horses, and in conserving safety and comfort for the horse its efficacy has become so widely recognized that the products of the Judsen factory are now sold in all parts of the United States. These pads

not only prevent injury to the hoof but also prolong the usefulness of the horse by six or eight years.

After securing the patent on his invention Mr. Judsen began to manufacture the pads in a small way and to interest his regular customers in the use of the appliance. Later his competitors in the horseshoeing business began to adopt the Judsen pads in connection with their work, and the new device also began to attract the attention of dealers in saddlery and also the wholesale dealers in heavy hardware. The demand for the pads thus increased with the passing years and finally, in 1911, Mr. Judsen found it expedient to dispose of his blacksmithing business and give his entire attention to the manufacturing of the pads. For the purpose he refitted the building which he had erected and the sales for the first year were less than five hundred dollars. Each successive year has been marked by a steady growth in the business and the annual sales for 1916 attained to the notable aggregate of fifty thousand dollars. In addition to the trade in all parts of the United States the factory now sends its products to the Canadian provinces and the countries of South America, besides which there has come a high endorsement in the adoption of the pads for horses retained in the service of the United States government.

With deep filial solicitude, Mr. Judsen, after selling his blacksmithing business, in 1911, made a visit to his native land with the primary object of prevailing upon his venerable parents to accompany him on his return to the United States. They consented and were given all of the comforts and kindly consideration possible in the pleasant home of their son, where the devoted mother died in the spring of 1916, at the age of seventy-four years, and where the father still remains, hale and vigorous, though he celebrated the eightieth anniversary of his birth in 1917.

Mr. Judsen is a man of high ethical ideals and takes deep interest in religious, charitable and general civic affairs. He and his wife are devoted members of the Moody church, of which he is a trustee. His political allegiance is given to the Republican party and he is affiliated with the Masonic fraternity.

In Will county, Illinois, in 1893, was solemnized the marriage of Mr. Judsen to Miss Hannah Joergensen, who likewise was born in Denmark, and they have four children,—Earl, Alice, Carl A., Jr., and Howard.

A. L. SCHULTZ & SON

That skilled hands and industry constitute the master key of success in the industrial world has been most distinctly exemplified in the career of the honored senior member of this representative Chicago firm of engineers, founders and machinists, and in addition to being the executive head of this important industry Albert L. Schultz has other substantial capitalistic and administrative alliances with manufacturing and commercial concerns of Chicago. He is one of the many sterling and loyal citizens given to America by the German empire, and his loyalty has been shown in his civic attitude as well as in his productiveness and worthy achievement along lines of normal industrial enterprise. The firm of A. L. Schultz & Son now gives special attention to the manufacturing

of the S. & S. improved friction clutches and accessories for the same, and in this department of the well established enterprise has it been possible to develop a business of broad scope and importance. In this connection it is but consistent to make brief quotations from one of the recent catalogues issued by this concern: "The numerous advantages gained by clutches in operating all kinds of machinery are well known and universally acknowledged. For factory use each department can be started and stopped independent of each other. The friction clutch is a perfect substitute for a tight and loose pulley, doing away with shifting belts. Our clutches are in successful operation on all kinds of machinery, having been subjected to the most rigid tests. They are neat in design, strong in grip and easy to adjust. All parts are made in duplicate and kept in stock. We have been manufacturing clutches for the past fifteen years and during that entire time have devoted much study to the improvement of the friction clutch. The result is our new improved friction clutch. This clutch has comparatively few parts, and none of them of great intricacy, so that a workman of the average skill can take the clutch apart and put it together again. The friction is furnished by two sets of wood blocks, forming a continuous circle on each side of the friction plate. On the front side of the friction plate the friction blocks are V-shaped, thereby giving greater friction surface by at least one-third more than the usual construction. . . . Our clutch, being a self-centering clutch, maintains the alignment of the shafts and therefore overcomes one of the worst troubles with which users of clutches have had to contend. The clutch is thrown in and disengaged with a positive movement, and is strongly locked in either position. It is impossible for it to disengage itself by centrifugal force, as is the trouble with many clutches. The adjustment is very simple and the clutch occupies relatively little space on the shafting."

The above brief data indicate to a certain extent what the S. & S. friction clutches have met with such unqualified approval and wide demand, thus incidentally contributing to the development of the substantial and important industrial enterprise conducted in the large and modern plant of A. L. Schultz & Son, at 1675-77 Elston avenue. Of the inception and growth of the business adequate description can be given more readily through a review of the career of Albert L. Schultz, who is one of the representative manufacturers and progressive and loyal citizens of Chicago.

ALBERT L. SCHULTZ

The executive head of the firm mentioned in the foregoing context has been in the most significant sense the architect of his own fortunes and has achieved success worthy of the name. He was born in the city of Hamburg, Germany, on the 27th of September, 1862, and is a son of Frederick A. and Henrietta (Ike) Schultz, who immigrated to America in the spring of the following year (1863) and established the family home in Chicago. As a skilled blacksmith Frederick A. Schultz found employment in the old-time plow works, First and Bradley then located on Desplaines street, and with this concern he continued his alliance seven years. For a number of years thereafter he conducted an

independent business as a blacksmith, and finally he engaged in the undertaking business. He was a man of strong personality and sterling character, was successful in his business activities, and commanded unqualified popular esteem. He continued his residence in Chicago until his death, at the venerable age of eighty-two years, his devoted wife having passed away at the age of seventy-seven years.

Albert L. Schultz continued to attend the public schools of Chicago until he had attained to the age of fourteen years, when he entered upon an apprenticeship to the trade of machinist, in the American Steam Engine Works, the plant of which was then established at the corner of Canal and Harrison streets. Within his three years' apprenticeship Mr. Schultz gained a thorough knowledge of machinery and engineering, and after leaving the employ of the concern noted he found employment as wrecking engineer for the Frazier-Chalmers Company, in connection with railway construction in Arizona, where he remained one year. He then returned to Chicago and for the ensuing three years he was employed as an engineer on steamboats plying the Great Lakes, to which service he gave his attention during the successive navigation seasons. Resuming work at his trade of machinist, Mr. Schultz thereafter was for six years in the employ of the Eisenrath Tanning Company of Chicago, being assigned to its plant at Racine, Wisconsin. He then returned to Chicago and accepted the position of master mechanic for the Davison Marble Company, with which he continued six and one-half years,—or until the failure of the company, in 1895. In the following year he formed a partnership with Frederick Lemlay, under the title of Lemlay & Schultz Machine Works, and then in a small building at the corner of Indiana and Kingsbury streets they engaged in the manufacturing of a general line of machinery utilizing at the start only five thousand square feet of floor space and giving employment to only four men. The enterprise, under the direct management of Mr. Schultz, proved successful from its initiation and with the passing years a comprehensive and prosperous business was developed. In 1905 the two partners purchased land on Elston avenue and erected the present modern plant, where employment is now given to a force averaging from twenty to thirty-five skilled mechanics. In 1908 Mr. Schultz purchased the interest of his partner, Mr. Lemlay, and at this juncture he admitted to partnership his son Albert F., whereupon the present firm name was adopted. As engineers, founders and machinists the firm, both under the original and the present regime, has maintained high standing in a commercial sense and also in the high-grade of the output of the factory and shops. Since 1903 special attention has been given to the manufacturing of the friction clutches of which mention is made in the foregoing article. Another specially successful phase of the industry is the manufacturing of brick machinery of the most improved type, and the mechanical equipment and general facilities of the plant are of the most modern order throughout. In 1914 Mr. Schultz became president of the Carey Brick Company, which was founded in 1898, by Thomas Carey, and the large and well equipped plant of which is located at the corner of Grand avenue and Sixty-fourth street. Here the company owns a tract of seventy-five acres and the plant has a capacity for the output of three hundred thousand building brick daily, this being the largest independent brick company in Chicago and its corps of employes numbering one hundred and thirty men. In 1915 Mr.

Schultz organized and became president of the Columbia Gravel Company, of South Elgin, Illinois, and here operations are carried on mainly by machinery, with a daily output of thirty cars of gravel, virtually all of this material being sold in Chicago. Mr. Schultz is a member of the Metal Trades Association, has received the thirty-second degree of Scottish Rite Masonry, and is affiliated also with the Mystic Shrine. He has identified himself fully and loyally with the best interests of the city in which the major part of his life has been passed and here his circle of friends is limited only by that of his acquaintances.

October 21, 1885, recorded the marriage of Mr. Schultz to Miss Amelia Jenzizesky, a daughter of the late Leo Jenzizesky, who was a man of education and liberal views and whose political influence in his native land, Russia, became such that he was exiled and found refuge in America. He became prominently identified with business and civic interests in Chicago and was for many years associated with John L. Clark in extensive real-estate operations. He was also one of the charter members of the Sharpshooters Park Association of Chicago. Mr. and Mrs. Schultz have three children.

ALBERT F. SCHULTZ

He whose name initiates this paragraph is the junior member of the firm of A. L. Schultz & Son, and was born in the city of Racine, Wisconsin, in August, 1886. His youthful education was acquired in the schools of Chicago and he learned the trade of machinist under the direction of his father and in the establishment of the Gerschell Brothers Ice Machine Company. After the dissolution of the firm of Lumley & Schultz, as noted in the preceding article, he became associated with his father in the control of the substantial business, and has since been junior member of the firm of A. L. Schultz & Son. He now has full charge of the firm's manufactory, and is general superintendent of the business, so that he is proving an efficient and valued coadjutor of his father. The maiden name of his wife was Henrietta Bennett, and they have two children, —Florence and Dorothy.

EMIL R. KLEMM

Technical skill, initiative and executive ability and progressive policies have been brought to bear by Mr. Klemm in the development and upbuilding of one of the substantial manufacturing industries of Chicago, and the business, which is now one of large volume, is owned and controlled exclusively by him, the same being conducted under the title of E. R. Klemm and the excellent equipped and thoroughly modern factory building now utilized was erected by Mr. Klemm for the purpose to which it is applied, its location being at 1447-55 West Austin avenue. Here have been established the headquarters of a very prosperous industry in the manufacturing of stone jacks, windlasses, hoisting crabs, pole-pullers, hand-power punches, shears for boilermakers and sheet-metal workers, etc., plate bending-rolls, pipe clamps, I-beam clamps, forged hangers, rods, stems,

etc., besides many other special mechanical devices, including an improved type of crucible tongs. Along these varied lines was developed the original industry but its province has been notably expanded, in the manufacturing of the Klemm motor trucks, which are of the highest standard of workmanship and which have stood the most severe tests, so that they represent the maximum excellence in this important line of motor vehicles, their introduction having been followed by a large and constantly increasing demand, as is true also of other high-grade motor vehicles that are turned out from the Klemm factory. Another extensively used and unique product of the Klemm institution is the Klemm tilting metal band-saw, of the use of which large manufacturing concerns in the leading industrial centers of the Union have availed themselves. Of the varied products of the Klemm factory adequate description is given in the literature issued directly by Mr. Klemm, and readily available on the part of those who make application for the same.

Emil R. Klemm, founder and owner of this important manufacturing business, was born in the ancient city of Magdeburg, Prussia, on the 19th of October, 1859, and is a son of the late William Klemm, who came from Germany to America with his family and established a home in Chicago in 1866. William Klemm was a man of sterling character and was an ex-machinist and mechanical engineer. He had the distinction of being the pioneer in the manufacturing of stone jacks in the United States, and he attained to success and influence as one of the representative general machinery manufacturers of Chicago, where he was a pioneer in this field of industrial enterprise and where he commanded inviolable place in the confidence and esteem of all who knew him. He retired from active business in 1906 and thereafter continued his residence in Chicago until his death, in 1915, at the venerable age of eighty-three years. He contributed his quota to the developing of Chicago as an industrial and commercial center and his loyalty to the city was of the most intense order, manifested in civic liberality and in large and worthy individual achievement that aided in the march of advancement.

The first factory of the late William Klemm was situated in the alley between Madison and Monroe streets, about midway between Franklin street and Fifth avenue. Here he initiated the manufacture of the first stone jacks ever made in the United States, and he had developed a prosperous business at the time when the historic Chicago fire of 1871 occurred, it having been his misfortune to have not only his factory but also his home entirely destroyed in this great conflagration. After the fire he resumed operations, at first utilizing as his workshop a mere shed that was situated in Messinger's stone yard, on Franklin street, near Van Buren street. In 1877 he removed to the corner of Market and Van Buren streets and later he obtained more eligible accommodations at 126 South Jefferson street, where he employed fifteen mechanics and manufactured a general line of machinery, in addition to the stone jacks. In 1892 Mr. Klemm removed his factory to a site on Desplaines street, near Jackson boulevard, and later larger quarters were secured at the corner of Lake and Desplaines streets, where he continued operations until his retirement, in 1906. In the latter years he employed in his factory an average force of about thirty mechanics, and from local limitations that trade was extended into the most diverse parts of the United States. It is specially interesting to note that in the manufacturing of stone-

jacks the name of Klemm has continued to be one of prominence from the time the first products of this order were turned out from the little factory of William Klemm until the present time, when the modern manufactory of the son, Emil R. Klemm, makes a specialty of manufacturing these valuable devices in varied types and in large numbers, the same being used in stone quarries, stone yards, bridge works and in other places where heavy mechanical work is done.

Emil R. Klemm was not yet seven years of age at the time the family home was established in Chicago, and here he has admirably upheld the prestige of the family name, both as a man of business and as a loyal and progressive citizen. He acquired his early education in the public schools and at the age of fifteen years he found employment in a basket factory. Later he was employed in the pipe mills of the Crane Company, and there he served a portion of his practical apprenticeship to the trade of machinist. Later he was employed in the factory of the late Warren Springer, and upon leaving the same he had gained precedence as a skilled machinist. In 1892 he became actively identified with his father's manufacturing business, to which he was the virtual successor, and from the same he has developed the large and successful industrial enterprise of which he is now the sole owner and executive head.

Mr. Klemm is well fortified in his opinions concerning governmental affairs and gives staunch allegiance to the republican party. He is affiliated with the Masonic fraternity, and holds membership in the Illinois Manufacturers' Association. He has utilized his mechanical skill also in the field of individual inventon, and on a number of his patented inventions is based in part the manufacturing business conducted by him.

In 1883 was solemnized the marriage of Mr. Klemm to Miss Angel Dienhart, who, like himself, was born in Germany but reared principally in the United States. The five children of this union are William L., Frances, George R., Frank E., and Emil R., Jr. The eldest son, William L., is a skilled mechanic and is actively associated with his father's business, in the capacity of assistant superintendent.

Though, as previously stated, Emil R. Klemm is the virtual successor to the business of his father, it is to be recorded that, with a financial reinforcement consisting of his own savings, amounting to six hundred dollars, he engaged in the manufacturing business in an independent way in the year 1892. His first factory was established at 99-101 West Monroe street, according to the old system of Chicago street numbering, and there he initiated operations with two employes and one apprentice. He began the manufacturing of stone jacks, windlasses and other special machinery, and his factory had but sixteen hundred square feet of floor space. Eighteen months later the floor space was increased by about one-half and four more mechanics were employed. At this location the business was continued five years, and then removal was made to 103-7 West Monroe street, where a floor space of forty-eight hundred square feet was made available. Here the constantly expanding business was conducted until the present modern factory was completed and occupied, in 1911. The site was purchased by Mr. Klemm in the preceding year and upon the same he erected a substantial two-story building specially designed and equipped for his use. This plant affords a floor space of twenty-six thousand one hundred square feet, and here steady employment is given to a force of forty workmen, including many highly skilled

machinists. In 1914 Mr. Klemm began the manufacturing of motor trucks, and this branch of the business promises to become one of major importance, the trucks having met with such appreciative demand that in 1917 it was found expedient to build an addition to the factory and to gain five thousand square feet of extra floor space specially for the manufacturing of the motor vehicles. Mr. Klemm is the inventor and patentee of the tilting metal band-saw, of which mention has been made, and also of an improved type of wagon wrench. Mr. Klemm is known as an expert and authority in fine machinery and its production, and from his factory have been sent forth products for use in many of the large manufacturing plants of Chicago and other of the principal industrial centers of the Union. The average annual sales now aggregate about one hundred and twenty-five thousand dollars.

A. FINKL & SONS COMPANY

Under this corporate title is conducted one of the substantial industrial enterprises that touches many other lines of manufacturing in Chicago, and the well equipped steam forge works of the company are established at 1325 Cortland avenue. Anton Finkl, president and founder of the company, was born in the ancient town of Neuburg, Bavaria, Germany, May 13, 1848, and he stands today as one of the vigorous, upright and honored figures in the manufacturing circles and civic life of Chicago, in which city he has maintained his home for a period of almost half a century. Mr. Finkl was afforded the advantages of the excellent schools of his native place and there he served a most thorough apprenticeship to the trade of blacksmith, his discipline being such in this connection that he became a specially skilled artisan in all branches pertaining to this trade, the phases of which are greatly amplified under the German system. After completing his apprenticeship Mr. Finkle traveled about as a skilled journeyman at his trade for a period of six years, and within this time he was employed at numerous places in Germany, Austria and France. It is worthy of note that he was thus employed in leading establishments in such cities as Berlin, Vienna, Strasburn and Paris. He indulged his wanderlust fully during these years and frequently was employed only a day, or even a few hours, in some blacksmith shop in which he applied himself to the work assigned, whether it be the shoeing of a horse, a mule or an ox, or the manufacturing of some manner of tool or implement. His skill invariably brought to him an appreciative recommendation from the master of the various establishments. When he returned to the parental home after the six years of travel, his honored father scanned these various recommendations that had been given him and then suggested that the young artisan was well fortified for going to America and finding employment under more advantageous conditions. Thus it was that in the year 1869, a short time after attaining to his legal majority, Anton Finkl severed the ties that bound him to the Fatherland and set forth to seek his fortunes in America. Soon after landing in New York city he made his way to Milwaukee, where he arrived on the 13th of December of that year. In the Wisconsin metropolis he found employment in the manufacturing establishment of his uncle, Carl Meyer, with whom he remained one year, in

the meanwhile gaining a measurable command of the English language. For the ensuing eight years Mr. Finkl continued as a valued employe in the establishment of the John Davis Manufacturing Company, of Chicago, save for an interim of three months during which he was employed in the machine shops of the Chicago & Northwestern Railroad Company, a position which he resigned at the earnest request of his former employer, Mr. Davis, who tendered him a position as foreman. In 1879 Mr. Finkl resigned his position with the Davis Manufacturing Company and established himself independently in business as a blacksmith, his shop having been at the corner of Clinton and Monroe streets. Here he soon began to give special attention to the manufacturing of high-grade tools for steamfitters, as he had established a splendid reputation in this line while still with the Davis concern. In 1880 his business was of such volume as to justify the employment of a force of six men, and the enterprise, under his vigorous and effective direction, continued to expand in scope and importance each successive year. In 1890 Mr. Finkl removed to more eligible quarters at 12-14 South Jefferson street,—as designated under the former system of street numbering in Chicago,—and there he amplified his operations by establishing a general steam forging business, his force of employes now numbering ten men and the trade at the start having been entirely of local order. In 1890 the manufacturing plant was removed to the opposite side of the same street, at Nos. 11 and 13, where was effected the lease of seventy-five hundred square feet of floor space, and where the force of employes was increased to twenty-five artisans. In 1894 Mr. Finkl's establishment was destroyed by fire, without a dollar of insurance indemnity, and in the face of this very appreciable financial reverse he did not in the least abate his courage and resolute purpose, but forthwith opened a new establishment, on Canal street. Under these conditions his name and reputation stood him well in hand, for there was a definite appreciation of his sterling character as well as his ability to turn out products of the maximum excellence in his line. The result was that the new plant became the scene of greater and more successful activities than had the one destroyed by fire, and the business expanded rapidly and substantially.

In 1902 Mr. Finkl effected the incorporation of his business under the present title of A. Finkl & Sons Company, with a capital stock of thirty thousand dollars. In the meanwhile, looking forward to the eventual erection of a modern industrial building for the accommodation of his business, Mr. Finkl had judiciously purchased a tract of land at the corner of Thirteenth street and Cortland avenue, the same being so situated as to afford direct railroad switching facilities. After the incorporation of the company under the present title there was erected on this tract the original factory, to which additions have since been made until the plant now gives an aggregate floor space of one hundred and ten thousand square feet, the force of employes varying from one hundred and fifty to one hundred and seventy-five at the present time. From serving merely the local trade, the company has extended its business until the products of the factory are now sold throughout the United States and the Canadian provinces, the principal output being steam and drop forgings and the high reputation of the concern constituting its best advertising and commercial asset. Mr. Finkl has been president and treasurer of the company from the time of its incorporation, his eldest son, Charles E., being general manager, and the second son, Fred has been

the secretary. Mr. Finkl is affiliated with the Masonic fraternity, the Independent Order of Odd Fellows, and the Independent Order of Foresters. Strong, loyal and upright, he has been the architect of his own fortunes, has achieved success of worthy order and has inviolable place in the confidence and good will of all who know him.

From the time when he came to the United States as a young man Mr. Finkl has been appreciative of the manifold advantages and attractions of the land of his adoption and during the long intervening years he has stood as a type of loyal and progressive citizenship, his interest in Chicago having been manifest in the support of those things that have contributed to its material and civic advancement and general wellbeing, his political allegiance having been given unreservedly to the republican party.

In the year 1871 was solemnized the marriage of Mr. Finkl to Miss Josephine Shillinger, who was born in the city of Baltimore, Maryland, and the supreme loss and bereavement of his life came when his loved wife was summoned to eternal rest, in 1916, when she was sixty-two years of age. Of the five children of this union three are living,—Charles Ernest, Fred and Frank, all of whom are actively associated with the business founded by their father.

Charles E. Finkl, the eldest of the sons, was born in Chicago on the 2d of October, 1873, and in addition to the discipline of the public schools he completed a course in the Bryant & Stratton Business College of Chicago. When a lad of thirteen years he began to assist in the work of his father's factory and he is a recognized expert in the mechanical and business details of the line of enterprise with which he has since been identified. He learned the blacksmith and steam-forging trade under the able direction of his father, was finally admitted to partnership in the business and has been its general manager from the time of the incorporation of A. Finkl & Sons Company, in 1902. He is a republican in politics and is affiliated with the Masonic fraternity. In November, 1894, Mr. Finkl wedded Miss Elizabeth Weber, and the one child of this union is a son, William.

Fred Finkl, second of the three sons, was born March 11, 1876, profited duly by the advantages of the public schools and in his father's establishment he learned the trade of patternmaker. He has been one of the principals in the A. Finkl & Sons Company from the time of its incorporation. He is a republican, is a member of the Rotary Club of Chicago and is affiliated with the Masonic fraternity, including the Mystic Shrine. He wedded Miss Emma Herbert, of Chicago, in the year 1911; they have no children.

Frank Finkl, the youngest of the three sons, was born June 19, 1878, and after leaving school he learned the trade of blacksmith and steam-forger in his father's factory, his association with which has continued since that time. He married, in 1908, Miss Martha Luding, of Chicago, and they have two children,—Albert and Harold.

D. O. JAMES MANUFACTURING COMPANY

In the manufacturing of speed-reducing transmissions, cut gears and other specialties of like order this company has gained high reputation and a place of

priority, the well equipped manufacturing plant being established at 1120-1124 West Monroe street. The business dates inception from the year 1888, when operations were instituted in a small shop at 84 Market street, the assigned functions of the new concern being the handling of special machine work and the manufacturing of gears and mill machinery, the original force of employes having averaged about four. In 1890 the business was incorporated under the laws of Illinois and with the title of the D. O. James Machine Company. At this time provision was made for limiting the industry largely to the manufacturing of metal workers' machinery, and the first officers of the company were D. O. James, Charles Hubbard and Frank Foster. In the meanwhile the plant of the company had been removed to the modern building of the Light & Power Company, on Market street, and in 1891 the equipment was destroyed by fire, the conflagration resulting from an irregularity in the working of the wires of the power company. Under these conditions the James company removed to 39-43 West Washington street, where requisition was made for about twenty-five hundred square feet of floor space. About this time the interests of Messrs. Hubbard and Foster were purchased by D. O. James and John Grant, and thereafter the business was continued for some time under the firm name of James & Grant, engineers and machinists. Within a short time J. B. Foote purchased an interest in the business, in 1895, but prior to this the firm of James & Grant has notably advanced its reputation through the successful manufacturing of several scientific machines to be utilized in the department of physics in the University of Denver Colorado, and also some for similar use in the University of West Virginia. In 1895 the manufacturing plant was removed to 58-60 South Canal street, where quarters were secured in Machinery Hall. Here the business was continued in partnership control until 1904, and in the meanwhile a substantial enterprise had been developed in the cutting of gears for bicycles and the manufacturing of special machinery of high grade. In 1904, while at the address last noted, the company met with a loss of nearly forty thousand dollars by fire, and Mr. James in the adjustment of affairs, sold his interest in the salvage to his associates. He then re-established himself in business, at the corner of Canal street and Washington, where he confined his operation to the manufacturing of gears and his improved speed-reducing transmission, consistently designated as a "centrally driven, well balanced drive of great emergency strength."

In 1907 Mr. James purchased a tract of land at 1120-24 West Monroe street, and on this site, seventy-two by one hundred and twenty feet in dimensions, he erected a modern industrial building of mill construction and three stories in height. In 1908 possession was taken of this new plant, and here operations having since been continued with constantly increasing success to the present time, Edison electric power being used in entirely for the operation of all machinery and the boilers at the plant being employed only for heating purposes. In the plant are utilized two hundred electric motors, and the mechanical equipment throughout is of the best modern type, as are also all other facilities. The products of the establishment are extensively used in metal and wood working manufactories, an average operative force of one hundred and ten men is employed, and the aggregate floor space utilized is twenty-six thousand square feet. In 1908 the business was incorporated under the present title of the D. O. James Manufacturing Company, and the executive officers of the company are as here

noted: D. O. James, president and treasurer; A. James, secretary; and D. H. James- vice-president. The company has membership in the Illinois Manufacturers' Association, the National Metal Trades Association and the American Gear Manufacturers Association. It is but consistent that in this connection be entered the following extracts from one of the recent catalogues issued by the company:

"The manufacture of James speed-reducing transmissions dates back to the year 1904, but it was not until 1907 that the great demand for an efficient speed-reducing outfit was fully appreciated. From that date on there has been a steady increase in sales, due not to advertising entirely but to repeat orders received from time to time from large concerns which have found, through actual test, the advantages of using an up-to-date drive of this kind. Each year for the past five years has shown the remarkable increase of not less than fifty per cent. over each preceding year. In fact, the total amount of orders entered for James transmissions for the.first two months of 1916 amounted to nearly as much as the total volume of business for the year 1913.

"James speed reducing transmissions were designed to eliminate the objectionable features in evidence in other forms of power transmission, and have been developed to meet the requirements of a variety of applications. They are semi-planetary, combining the best features of the purely planetary and the non-planetary or spur-gear type of transmissions. The James line of speed reducers has been developed after careful study and thorough experimentation and test. The D. O. James Manufacturing Company are pioneers in this field and have brought this type of speed reducers to its present high standard of usefulness and efficiency. Being specialists in cut gearing, and this being strictly a cut-gearing proposition, we are placed in excellent position to produce first-class speed-reducing transmissions to the very best advantage. Simplicity of construction is one of the prominent characteristics of the James transmissions. Our engineering department has for years been putting forth every effort to bring about a complete standardization of parts which go to make up the different horse-powers and reductions, with a view to lessening the cost of production. We are pleased to announce that we have succeeded in so standardizing the great range of ratios that the cost of this type of transmission need no longer be considered. Advantages of uninterrupted service, elimination of excessive noise and vibration, simplicity of operation and low cost of maintenance are features which are embodied in James transmissions and which must not be overlooked by engineers who are laying out new plant equipment. The James reducer is a unit in itself. compactly constructed, having very much the appearance of an electric motor, is easily installed and can also be arranged for ceiling suspension. The advantageous application of James reducers is demonstrated most emphatically in innumerable industrial plants throughout the country. They are admirably adapted for use in brick plants, cement plants, coal mines, excavation work, steel mills, paper mills and countless other industrial establishments of a like nature. James reducers find most satisfactory application for use in operating stokers, ore roasters, cereal cookers, conveying and elevating machinery of every description, car pullers and loaders, hoists, freight and passenger elevators, stuff chests, agitators, mixers, paint chasers, feed driers, garbage driers, etc. Starch and glucose plants will find the fully enclosed features most acceptable.

D O James

"James reducers will be found highly efficient, strong and durable, the gearing being entirely enclosed in housing, operating in oil under ideal conditions. The fully enclosed feature positively eliminates all changes of dirt getting into the working parts and leaves no gears exposed to injure the workman. They are centrally driven, making a well balanced drive of great emergency strength."

D. O. JAMES

D. O. James, president and treasurer of the representative manufacturing corporation that bears his name, was born in St. Clair, Pennsylvania, December 28th, 1859 and was eight years of age at the time of the family removal to Murphysboro, Illinois, where he was reared to adult age and received the advantages of the public schools. He located in Chicago in 1876 and his comprehensive and thorough training in practical and technical mechanics having been acquired in various Chicago manufacturing concerns of prominence.

D. H. JAMES

D. H. James, vice-president of the D. O. James Manufacturing Company, is a son of the president of this corporation and was born and reared in Chicago, where he received the discipline not only of the public schools but also completed an effective technical course in the Lewis Institute. He is one of the progressive young business men of his native city and in the time-honored Masonic fraternity he has received the thirty-second degree of the Scottish Rite besides being affiliated with Medinah Temple of the Mystic Shrine.

THE ARTISTIC WOOD TURNING WORKS

The demand for manufactured products of all kinds must show both creative and appreciative phases, and this implies that the manufacturing must prove the value of his products and thereby gain the objective appreciation on which all business is founded. In the achievement of this and Eugene Rutishauser, founder of the Artistic Wood Turning Works, of which corporation he is president and treasurer, has been signally fortunate, and the result has been gained by the application of technical and executive ability in the production of an output of definite superiority and attractiveness, so that demand has followed closely upon introduction to public notice. The well equipped plant of this corporation is situated at 515-523 North Halsted street and has the best of modern machinery and accessories for the manufacture of turned and spiral mouldings, pedestals, electric light standards and wood turning of every description. The basis of the now large and substantial business is best denoted through the following brief review of the career of the founder.

Eugene Rutishauser was born in Chicago on the 17th of September, 1866, and is a son of John J. and Margaret Rutishauser. The honored father was born in Switzerland and became a pioneer of Chicago, where he established his home in 1856. In this city he was for many years engaged in the book and stationery business, and in the later years of his long and useful life he insistently kept himself busy by effective service as bookkeeper and secretary for his son Eugene, of this review. He died on the 4th of November, 1914, at the venerable age of eighty years.

In the public schools of Chicago Eugene Rutishauser continued his studies until he had attained to the age of sixteen years, when he entered upon an apprenticeship in the establishment of the Edward Roos Manufacturing Company, where he became an expert artisan in wood turning and wood carving. After the completion of his apprenticeship he continued in the work of his trade until he was twenty-four years of age, when he initiated his independent business career, having in the meanwhile been employed for some time by M. Garrison & Company. He had carefully conserved his earnings, as a proper reinforcement of his ambition to engage in business for himself and his personal reputation was such that when, in 1889, he engaged in the manufacturing of turned and spiral mouldings, etc., on his own account, he had no difficulty in securing on credit the requisite machinery and accessories. He began operations on a modest scale and in 1890 he opened his factory at the corner of Lake and Union streets, under style Rutishauser & Greenwood, and the firm of Rutishauser & Greenwood was successful from the time of its formation. In the beginning the two partners and two employes constituted the entire working force. Careful and well ordered enterprise brought about a substantial expansion in the business from year to year, and finally larger quarters were obtained, at the corner of Sixty-second and LaSalle streets, where improved machinery was installed and the force of employes increases to forty men. Several years later Mr. Rutishauser sold his interest in the business to the Tabor Woodturning Company, and shortly afterward he established himself independently in the same line of business, at the corner of Wells street and Institute Place. So rapid and substantial was the increase in the business that three years later he found it expedient to remove his plant to larger quarters, at the corner of Jefferson and Fulton streets, where he gave employment to forty or more skilled mechanics. In 1901, to meet increasing demands, Mr. Rutishauser purchased land and built a factory at the corner of Sangamon and Wayman streets, and there he increased his force of employes to one hundred persons. At this location he continued operations twelve years, at the expiration of which, in 1914, he traded his factory and land for his present plant, a modern brick structure that was formerly known as the Dawson factory and that affords an aggregate floor space of one hundred thousand square feet. Here he gives employment to a force varying from one hundred and twenty-five to one hundred and fifty persons, the most of whom are expert artisans, and here special attention is now being given to the manufacturing of the finest type of floor-lamp standards, pedestals and artistic furniture specialties of varied other types. The trade of the concern has been extended into the most diverse parts of the United States and the Canadian provinces, and a substantial export business has shown a cumulative tendency, notwithstanding the deplorable conditions entailed by the great European war. The business was

incorporated under the present title on the 1st of January, 1904, and Mr. Rutishauser, as president and treasurer, has brought to bear his characteristic energy and progressiveness in the management of the admirable manufacturing and commercial enterprise which has been developed almost entirely through his ability and well directed endeavors. He is a member of the Illinois Manufacturers' Association, the Chicago Association of Commerce and the Swiss Turnverein, his political allegiance being given to the Republican party.

April 8, 1889, recorded the marriage of Mr. Rutishauser to Miss Nellie Smith, of Chicago, and they have four children,—Elmer, Howard, Helen, and Marian. The family home is in the attractive Oak Park suburb of Chicago.

JAMES W. HEDENBERG

Realty is the basis of all security, and the basis of security in real-estate transactions is found in the probity, specific knowledge and liberality of those by whom they are conducted. One of the oldest real-estate agencies of Chicago is that of which Mr. Hedenberg is head, the same having been founded by his honored father, the late John W. Hedenberg, in 1866, and its history having been consecutively identified with the family name during the long intervening years, with an inviolable reputation that has ever been a distinct business asset. In the wide scope and importance of his operations in all kinds of Chicago real-estate Mr. Hedenberg has a status of a recognized priority and influence in this field of enterprise, and both he and his father have found it within their province and power to do much in the furtherance of the civic and industrial progress of the western metropolis. Mr. Hedenberg has been one of the most loyal members of the Chicago Real Estate Board, of which he has served as secretary, and is also a member of the Cook County Real Estate Board, of which he served as president, and the fine ideals and ethics of those boards which he has vigorously upheld. He is also actively identified with the Chicago Association of Commerce. In the handling of this business he maintains well appointed offices at 40 North Dearborn street.

In a preparatory way there is special consistency in mentioning the fact that Mr. Hedenberg was the author and publisher of the first and only map of the "Chicago Industrial District in Illinois." He devoted fourteen months to the preparation of this valuable piece of chartography, which gives an accurate and comprehensive delineation of Chicago and its outlying industrial districts, from Evanston on the North to One Hundred and Eighty-sixth street on the south, and from the state line on the east to DuPage County on the west. The map has received the positive approval of all railroads entering Chicago and also that of all important institutions within the industrial districts of the city and its environs. The production is of specially great value in connection with real-estate transactions and improvements and Railway freight service within the district and the map is a recognized authority for reference purposes.

Mr. Hedenberg, known as among Chicago's foremost dealers in factory and warehouse realty and general industrial properties and the owner of large and valuable real-estate holdings in both industrial and residential districts, was born

at Kirkwood, Missouri, but has been a resident of Chicago since his childhood, his father, the late John W. Hederberg, settled in Chicago in 1861 and became one of the most prominent of the pioneer exponents of the real-estate business in this city, his influence having been large and beneficient along development lines both before and after the great Chicago fire of 1871. He was one of the organizers and stock-holders of the townsite company, that owned and laid out the attractive little city of Kirkwood, Missouri, now one of the most beautiful residential suburbs of the city of St. Louis. He continued to be actively and influentially concerned with the real-estate operations in Chicago from 1865 until his death, in 1902, at the venerable age of eighty-two years.

James W. Hedenberg acquired his early education in the public schools of Chicago and in 1866 he assumed the position of office boy for his father. In connection with the latter's well ordered real-estate operations he early gained accurate and broad knowledge of the details of the business and also of intrinsic property values. Finally, however, he became a salesman of heavy hardware, and for ten years he did effective service as traveling representative in this line, he having been employed during that period by several of the leading heavy hardware concerns in Chicago and St. Louis. Since 1884 he has given his entire attention to the real-estate business, and since 1906 he has given almost exclusive attention to the handling of industrial properties. In this connection he has owned and placed advantageously on the market many large and valuable factory and commercial sites. It may be noted that he owned and sold the site of the Lyon & Healy factory, at Forty-first and Fullerton avenues, where he still owns about two million square feet of valuable land, in what is known as the Healy Manufacturing District. He owned and sold Block No. 18 in School Section, owned and sold the block on which the Chicago Dental College and the Memorial Hospital were erected, and owned and sold two blocks at the corner of Campbell and Taylor streets, on part of which is situated the large plant of the Wheeling Corrugated Iron Company, and on a part of which the Hurley Machine Company are preparing to erect their new plant.

In 1916 Mr. Hedenberg sold one piece of his industrial property that had an area of one million six hundred thousand square feet to the Peoples Gas Light and Coke Company. He still has large and valuable holdings and on his records are always to be found most desirable investments in land for industrial use as well as the best order of general real-estate. He served as chairman of the building and grounds committee of the Chicago Public Library, and during the last two years of the construction of the Library Building at Michigan boulevard and Washington street and initiated and had installed the "Water Curtain" on the Library Building, which has saved it from defacement from the fires which have occurred across the street from that beautiful structure.

Mr. Hedenberg is a Republican in politics, is identified with the York and Scottish Rite bodies of the Masonic fraternity, as well as the Mystic Shrine, and holds membership in the Hamilton and Templar Clubs. He takes deep pride in his home city and its marvelous advancement from year to year. In the industrial field no real estate man has done more to develop new districts for manufacturing and ware-house purposes and his mature judgment and comprehensive knowledge makes him a recognized authority in connection with local real-estate,

so that his advice and counsel are frequently sought aside from his individual activities.

JOHN KIMMETH & COMPANY

Like many others of the substantial business enterprises of Chicago that conducted by this firm had a very modest inception, and its steady growth in volume has been a natural concomitant of efficiency of organization and service, the firm now controlling a large and well ordered business in the upholstering of furniture of the best grades. In the well equipped factory, 831-839 North Wood street, a force of fifty employes is now retained and the annual business has attained to an average aggregate of one hundred and fifty thousand dollars.

In 1894 John and Charles Kimmeth, brothers, and William Wiand, all skilled upholsterers, formed a partnership and established themselves in business at 995 (old number) Milwaukee avenue, and at the beginning their only employe was a wagon boy, sixteen years of age. In the initial period operations were largely confined to repair work on upholstered furniture, and the firm soon gained a reputation for such excellence of workmanship that the business began to expand through the assuming of contract work for furniture dealers. For the exceedingly low rental of thirty-five dollars a month, the firm obtained a lease of a three-story building, which gave them a floor space of four thousand square feet, and in connection with the same they rented a barn for storage purposes. The business for the first year aggregated eight thousand dollars, and in the meanwhile the members of the firm did all of the work with the assistance of but one employe. In 1898, to accommodate the constantly increasing business, the factory was removed to a building at the corner of Ashland and Hadden avenues, where requisition was made for twelve thousand, five hundred square feet of floor space and where the corps of employes was increased to twenty-five persons, not including salesmen who represented the company through the central west. In 1901 the firm was again compelled to seek larger quarters, and removal was made to the present location, which was improved and supplied 15600 feet in 1903; a three-story building, 25 by 85 feet was added and in 1905 a four-floor 66 by 130 which was a four-story building that gave thirty-five thousand square feet of floor space, and thus the plant is now one of ample proportions, even as its general equipment is of the most modern order throughout. The enterprise, substantial and well conducted, is one of important order and is confined exclusively to upholstering. The firm has membership in the National Furniture Association and the Chicago Furniture Manufacturers' Association.

CHARLES KIMMETH

Charles Kimmeth, who was one of the men primarily interested in the development of the business of John Kimmeth & Company, was born in the town of Zellingen, near Würzburg, Kingdom of Bavaria, Germany, on the 10th of September, 1862, and he was reared and educated in his native land. In 1882, when

about twenty years of age, he came to the United States, and about five years later his father, Joseph and brother John Kimmeth, joined him in Chicago. Upon his arrival in America Mr. Kimmeth established his residence in New York city, and there he learned the finishing trade, in which he became an expert workman. He served a three years' apprenticeship in the establishment of P. Nathan & Company, and then, in 1886, he came to Chicago and entered the employ of S. Karpen & Brothers, one of the country's leading concerns in the manufacturing of the finest type of upholstered furniture. Mr. Kimmeth was employed as a finisher in the Karpen factory for three years, and thereafter was similarly employed by the John M. Smyth Company until 1890, when he accepted a position as foreman in the factory of the A. C. Selbitz Company. For four years he was superintendent of the finishing department in the factory of this company, and this incumbency he retained until he established himself independently in the upholstering and finishing business, as noted in the preceding article. Mr. Kimmeth has been most appreciative of the advantages and opportunities that have been afforded him in the city and country of his adoption and besides having achieved noteworthy success he has stood exponent of loyal and progressive citizenship.

On the 24th of May, 1890, was solemnized the marriage of Mr. Kimmeth to Miss Clothilda Fritsch, who likewise is a native of Germany, and of their six children only two are living,—Charles J. and Cecilia.

JOHN KIMMETH

John Kimmeth, younger of the two brothers who are principals in the firm of John Kimmeth & Company, was born at Zellingen, Bavaria, on the 30th of July, 1866, and was reared and educated in his native land, when he came with his father to America in 1887, joining his brother Charles in Chicago. Here he served a thorough apprenticeship to the trade of upholsterer and thus he was well fortified when he became associated with his brother in founding the now large and prosperous upholsfering and finishing business conducted under the firm name of John Kimmeth & Company. He has won prestige as one of the resourceful and progressive business men of the western metropolis and takes loyal interest in all things concerning the civic and material welfare of his home city.

In the year 1895 Mr. Kimmeth wedded Miss Martha Priebe, of Chicago, and they have three children, Edward, Joseph and Hattie.

WILLIAM WIAND

William Wiand, the third member of the firm of John Kimmeth & Company, was born in the city of Milwaukee, Wisconsin, on the 13th of September, 1858, His early educational advantages were those afforded in the schools of Milwaukee and Chicago and in the latter city he served his apprenticeship in the trade of

upholsterer. He became the valued associate of the Kimmeth brothers in establishing the upholstering business with which he has been consecutively identified to the present time and to the development and upbuilding of which he has contributed a generous quota.

In 1889 the marriage of Mr. Wiand to Miss Elizabeth Miller took place and they have five children living: Margaret, Mary, Anna, Josaphene and Eleanor.

ANDERSON—SHUMAKER COMPANY

With a manufacturing plant supplied with the most modern mechanical and accessory facilities for the handling of a diversified forging work, this company holds high rank among similar concerns in Chicago, has developed a substantial and representative business and numbers among its patrons many of the most important industrial corporations of the western metropolis, including the Continental Can Company; Libby, McNeill & Libby; Armour & Company; and the Corn Products Company. The business dates its inception from the year 1902, when a copartnership was formed by Carl Anderson and Alpheus Shumaker, who as skilled artisans at their trade had been coworkers in the machine shops of Robert Tarrant, their homegenous ambitions and ideals having brought about a close friendship and finally resulted in their establishing their independent business enterprise. Their available financial resources were limited but they were amply fortified in technical ability and sterling integrity of purpose, so that their new venture was initiated under favorable auspices, though on a modest scale. Their original factory was established at the corner of Twenty-first street and Campbell avenue, and at the start they employed only two assistants. With vigor, earnestness and indefatigable industry the partners applied themselves to the upbuilding of their business, which in the early stages was confined to general job work secured from Chicago and its vicinity, a specialty being made of the forging of steel dies. So-called luck has a definite affinity for men thus worthily reinforced, and success attended the new enterprise from the beginning, the original shop, utilizing only three thousand square feet of floor space, finally having such a volume of business as to necessitate the employment of nine skilled workmen. The continuous growth of the business finally made it imperative to obtain larger quarters, and in 1916 removal was made to the present well located and modern factory, at 824 South Central avenue, the company having a long lease of the property and the plant, with fifteen thousand square feet of floor space, having among its important facilities a private switch track with direct railroad connection. With the enlarged equipment it has been possible to make the best of provisions for the handling of increased trade and the force of employes now numbers twenty competent workmen. The business of the firm for the first year aggregated ten thousand dollars, and the most significant voucher for the splendid growth that has since occurred is the statement that the business for the year 1917 was in excess of seventy-two thousand dollars, the while the reputation of the company for efficiency of service and for the execution of work of the highest grade constitutes one of the best commercial assets of the business. A large percentage of the output of this well ordered industrial establishment

consists of a fine line of dies, but facilities are provided for the production of other forgings of a general order and of equal excellence, including railway supplies, the trade of the concern coming largely from blacksmiths and manufacturing establishments, and orders being received from most diverse sections of the Union, in addition to the substantial business controlled in Chicago and adjacent territory. The equipment of the company's plant now includes four steam hammers and all other mechanical accessories are of the best modern type.

In 1916 the Anderson-Shumaker Company was incorporated under the laws of Illinois and with a capital stock of twenty-five thousand dollars, Mr. Anderson becoming president and treasurer of the company and Mr. Shumaker the secretary and general superintendent.

CARL ANDERSON

Carl Anderson, president of the company described in the foregoing article, was born in the town of Laholm, Sweden, on the 25th of October, 1866, and is indebted to the schools of his native land for his early educational discipline. At Engelholm, Sweden, he served a most thorough apprenticeship to the trade of blacksmithing and forging, and after working at his trade in Sweden for a period of five and one-half years he came to the United States, for the purpose of finding better opportunity for the achieving of independence and prosperity through individual effort. He arrived in Chicago in the year 1887, and his first employment was as a workman in the blacksmith shops of the great car manufacturing plant of the Pullman Company. His service with this company continued one year, and in the meanwhile he attended night school and fortified himself in better knowledge of the English language. During the second year Mr. Anderson was employed by the Goudy & Strom Forging Company, and the succeeding two and one-half years found him as a valued and skilled employe in the machine shops of Robert Tarrant. For nine years thereafter he was in the employ of the J. L. Crosby Company, and during the last five years he held the position of foreman, his severance of this alliance having occurred when he became associated with Mr. Shumaker in founding their independent business enterprise, as noted in the preceding article. Mr. Anderson is widely known as an expert in the steel-working industry and has so ordered his course as to command at all times the confidence and good will of those with whom he has come in contact in either business or social relations. He is a stalwart supporter of the cause of the Republican party, is affiliated with the Masonic fraternity and the Independent Order of Odd Fellows, and is an active member of the Swedish Club of Chicago.

On the 9th of August, 1891, in Chicago, was solemnized the marriage of Mr. Anderson to Miss Josephine Johanson, who had been his schoolmate in Sweden, and they have two children,—Richard F. and Pearl J. Anderson. Richard F. Anderson, the elder of the two children, was born February 7, 1894, and he was given the advantages of the public schools, which he attended until he was sixteen years of age. He then obtained employment in the keyboard department of the extensive factory of the Western Electric Company, his original service having been that of errand boy. He manifested his youthful ambition by simultaneously

attending the Lewis Institute, as a member of the evening classes, and there he completed a course in mechanical engineering. He remained five years in the employ of the Western Electric Company and rose to the position of engineer in the switchboard department. Upon resigning this position he accepted that of engineer and foreman in the factory of the Anderson-Shumaker Company, of which his father is president. On the 16th of October, 1915, Richard F. Anderson wedded Miss Hilda A. Erickson, daughter of Charles Erickson, of Chicago, and they have on child, Grace A. Anderson.

ALPHEUS SHUMAKER

Alpheus Shumaker, secretary and general superintendent of the Anderson-Shumaker Company, was born at Buchanan, West Virginia, November 22, 1862, and his youthful education was gained principally in the public schools of Grafton, that state, where also he served an apprenticeship in the blacksmith shops of the Baltimore & Ohio Railroad. He continued in the employ of this railroad company eight years and then went to Plattsmouth, Nebraska, to take a position as blacksmith in the shops of the Burlington & Missouri Railroad, which is now a part of the Chicago, Burlington & Quincy Railroad system. He remained at Plattsburg two years and then, in 1888, came to Chicago, where he found employment in the extensive machine shops of Robert Tarrant. Later he was employed in turn by the Fitzsimmons & Cornell Manufacturing Company, by Crosby & Company and by the American Can Company.

Mr. Shumaker is aligned in the ranks of the republican party and is a thoroughly loyal and progressive citizen. He is affiliated with the ancientcraft and capitular bodies of York Rite Masonry and also with the Independent Order of Odd Fellows, in which he has passed various official chairs.

The year 1884 recorded the marriage of Mr. Shumaker to Miss Winifred Gardner, daughter of William Gardner, of Sandwich, Illinois.

THE BENNETT-O'CONNELL COMPANY

The corporation whose title is here designated, contributes its quota to the precedence of Chicago as one of the world's great industrial and commercial centers, and controls a large substantial and steadily increasing business in the manufacturing of a complete line of Electro-Plating and Polishing machinery and equipment, accessories and supplies.

The Company is incorporated under the laws of Illinois, with a capital stock of One Hundred Thousand Dollars, and its executive officials are Martin J. O'Connell, President; Uva S. Ayer, Vice-President, and Edmund J. Stack, Secretary. The general offices and well equipped plant which the Company owns are located at 3600 South Morgan St., having a ground frontage of three hundred and sixty feet on Thirty-sixth street and a south line extension of four hundred and sixty feet, with a spur track leading directly to the factory, mak-

ing possible the loading or unloading of six cars simultaneously within the building itself, besides giving the best of general railway facilities.

The Company maintains a local distributing depot at 15-17 South Clinton street, and has distributing agencies in other parts of the country, notably in Detroit and Meriden, Connecticut.

The interested principals are stockholders in the Ayer-O'Connell Manufacturing Company of Meriden, Conn., where the factory is established in the close vicinity of the Cotton Mills, for the manufacture of all kinds of Buffing Wheels used in the trade.

The annual sales of the Chicago Company approximate a half million dollars a year and an appreciable export trade is in development.

In the preceding paragraphs is given brief record concerning the Bennett-O'Connell Company and supplemental thereto a sketch of the career of its president may consistently be added.

Martin J. O'Connell was born February 14th, 1863 in Lake Forest, Illinois, where his parents were pioneer residents, and his father, a native of New York State, was a prosperous citizen and extensive land owner. His mother was a native Illinoisan, the site of the old homestead estate, where he was ushered into the world being now a part of the grounds of the Onwentsia Golf Club, in the beautiful and patrician suburb of the Western Metropolis. He received his education in the parochial and public schools and beginning his commercial training early was practically reared in the business life of Chicago.

For a number of years he was affiliated with the Northampton Emery Wheel Co. of Leeds, Mass. and this alliance continued until he initiated his independent career as a manufacturer, identifying himself with the Bennett-O'Connell Company, which was organized in 1896.

In 1899 he was married to Miss Mary Frances Stack, who has since departed this life, and surviving this union are five sons and one daughter. The two older sons are now attending college.

Mr. O'Connell's career has been marked by earnest and effective endeavor through which he has won for himself definite success and a secure vantage ground as one of the substantial representatives of manufacturing and commercial enterprise of Chicago. He is an active member of the Illinois Manufacturers Association, the Metal Equipment Association, the Hardware Club, the Central Manufacturing District Club and other social and fraternal associations.

The family home is in Wilmette, Illinois.

AMERICAN SPINNING & SHEET METAL WORKS

A native son of Chicago who early gained fellowship with the forces of adverse circumstance and who has depended upon his own resources since his boyhood, has constituted the power through which has been developed the substantial business conducted under the above title, and this man, Ernest F. Scheldein, has rendered good account of himself in initiative and constructive grasp, in the possession of characteristics that beget popular confidence and esteem, in

technical knowledge as a skilled mechanic and in worthy achievement as a business man of energy and resourcefulness. He is virtually the sole owner of the prosperous industrial business of which he is the founder and has given to the American Spinning & Sheet Metal Works a high reputation for efficiency of service and for fine workmanship in connection with all products sent forth from the establishment. He has been unequivocally the architect of his own fortune and his experience as an artisan has been broad and varied.

In the year 1902, with an available capital of only forty dollars, Mr. Scheldein, fortified by his excellent reputation as an expert sheet-metal worker of indefatigable industry and as a man of purposeful integrity, opened a little shop and engaged in business in an independent way, his equipment consisting of a good set of tools and a room that afforded about four hundred square feet of floor space. The first three months brought but little profitable business to the miniature factory, but by this time Mr. Scheldein had turned out work of such superior excellence as to attract attention, the while certain large dealers who knew of his mechanical skill had learned of his initiating his independent enterprise, so that from that time forward the business showed a healthy cumulative tendency. In his little job shop Mr. Scheldein began to receive more and more orders of important nature, and his execution of the same proved the best possible advertising for his establishment. He remained at the original location for a period of five years, and in the meanwhile added to the accomodations from time to time until he had a shop of appreciable size and of the best type of equipment. The building in which his shop was established was razed in 1907, in connection with making provisions for the erection of the present fine passenger station of the Chicago & Northwestern Railroad, which acquired the property. Though his lease of his quarters did not expire until three years later, he had no recourse save to vacate the same, but he received no remuneration whatever for such vacation of the property, though removal, as a matter of course entailed no inconsiderable expense and a virtual cessation of business for a time. Under these conditions the manufacturing plant was removed to quarters in a building at 560 West Washington street, where was obtained a floor space of thirty-two hundred square feet. Here the mechanical equipment of the plant was so enlarged as to make possible the execution of all kinds of work pertaining to sheet metal and the spinning of metal. Within the ensuing five years the force of skilled employes was increased to ten and the products of the factory had found sale from coast to coast,—a splendid development of what was originally a mere local business.

In 1912 Mr. Scheldein removed his plant to 8-10 North Kinzie street, where he leased a floor space of nearly four thousand square feet and where, within the same year, he increased his force of employes to fourteen men. Continuous growth attended the business and in January, 1917, there came forward disaster to the enterprise, as the manufactory was entirely destroyed by fire, the conflagration having originated in and entirely destroyed also the factory of the Pitner Gasoline Lighting Company. In the destruction of his plant Mr. Scheldein sustained a heavy loss above the insurance indemnity, which was of minor order, and further loss of sixty-five hundred dollars came to him through the failure of the Pitner Company, which had owed him this amount, and which was unable to rally from the losses incidental to the destruction of its own plant. This misfortune did not in the least tend to baffle the courage and energy of Mr. Schel-

dein, who had early learned to surmount obstacles through self-reliance, and as soon as proper equipment could be installed he opened a new establishment and placed the same in operation. This well equipped plant occupies the second floor of a modern industrial building at 467 East Ontario street, the building having been erected for the Central Scientific Company, which here has its offices, laboratories and factory. Here the American Spinning & Sheet Metal Works utilized an aggregate floor space of five thousand square feet, and no similar institution in Chicago can claim a superior mechanical equipment or better general facilities for the spinning of metal and the handling of all kinds of sheet-metal work, the average number of employes at the present being sixteen skilled mechanics. From a modest inception the business has been developed until it now represents an average of thirty-six thousand dollars annually, and the principal products in the regular line of manufacture in the establishment are lavatory supplies, moving-picture accessories and supplies, fixtures and supplies for gasoline lighting, and gasoline lanterns that are conceded to be the best on the market.

ERNEST F. SCHELDEIN

Ernest F. Scheldein, founder and proprietor of the American Spinning & Sheet Metal Works, was born in that part of Chicago that has gained the significant designation of "Little Hell," and it may be readily understood that his couch of infancy had no sybaritic environment. The date of his nativity was April 10, 1866, and at that time the sheolic appelation had not yet been applied to the district in which he was ushered into the world. He is a son of Charles and Frederica (Fischer) Scheldein, both of staunch German lineage, and both are now deceased, the father having been a brickmason by trade and vocation. Ernest F. Scheldein attended the public schools in an irregular way until he was about twelve years old, and the major part of his education was that received in the stern school of experience, with full quota of "hard knocks." Before he was ten years of age he was found doing all manner of small jobs that would enable him to earn a little money, and as a lad of twelve years he was apprenticed to learn the trade of tinsmith. He became in time an expert worker in sheet metal and as a journeyman at his trade he was employed steadily until he entered business on his own responsibility, as shown in the foregoing article. He was employed in various Chicago manufacturing establishments and finally he was made foreman of three departments in the manufactory of the Acorn Brass Company. His alliance with this company covered a period of eight years, his first service having been as a tin worker in a department newly established by the company in an experimental way. He was the only employe in this department at the start and he made its business so profitable that the company gradually increased the force of tinsmiths until it comprised sixteen men, Mr. Scheldein being made foreman of the department and later having been given similar jurisdiction in the brazing and metal-spinning departments also. Of this triple foremanship he continued the incumbent until the company retired from business, in 1902, when he became the founder and proprietor of the substantial enterprise

now conducted under the title of the American Spinning & Sheet Metal Works, description of which is given in the preceding article.

Mr. Scheldein is a stalwart in the ranks of the republican party, though he has had no desire for political activity or public office. He is affiliated with both York and Scottish Rite bodies of the Masonic fraternity, including Chicago Commandery of Knights Templars, and holds membership also in the adjunct organization, the Mystic Shrine. He is a member of the Benevolent & Protective Order of Elks and the Royal League, and his name appears also on the roll of members of the Logan Square Athletic Club, of Logansport, Indiana.

In 1890 Mr. Scheldein wedded Miss Susan Seamon, of Chicago, and her death occurred in 1892, the one child of this union being Lillian, who is the wife of Herbert Haas, of Chicago. In the year 1893 was solemnized the marriage of Mr. Scheldein to Miss Mary Brandt, of Cincinnati, Ohio, and their only child, Arthur, is now associated actively with his father's business, after having served in the establishment a thorough apprenticeship to the trade of metal spinning and general sheet-metal working. He was born February 25, 1896, and was afforded the advantages of the public schools. As a vigorous and ambitious young business man of marked ability, he is proving a valuable coadjutor to his father. He is affiliated with Logan Square Lodge of Ancient Free & Accepted Masons, of which his father also is a member.

The subject of this review is a man of fine physical powers and has been an enthusiast in clean athletic sports. As a youth he held special local fame as a skillful boxer and all round athlete, and he still has much personal verve as well as lively interest in athletics, besides which he is a devotee of the automobile.

LE ROY P. KUHN, M. D.

It is specially consistent that in this publication be accorded recognition to Dr. LeRoy Philip Kuhn, for his professional work in the central manufacturing district of Chicago has been of the most benignant order, particularly in emergency surgical practice, to which he has found it expedient to confine his activities entirely. His office is maintained at 1120 West Thirty-fifth street, and he was the first physician and surgeon to engage in emergency practice in the district during the month of February, 1912. His professional business is now of a broad scope, his office is kept open day and night at all hours and he has as his valued office assistants and coadjutors Dr. Ira E. Hoffman, a general surgeon, and Dr. Frank J. Conroy, a specialist in the treatment of diseases of and injuries to the eye. One or more of these three physicians is to be found at the office headquarters at all times, so that emergency cases are assured of immediate and proper attention.

Dr. Kuhn is surgeon in chief of the Lumberman's Mutual Casualty Company, chief surgeon of the Illinois Manufacturers' Casualty Association, each company requiring a portion of his time down town. He is an official of the Illinois branch of the National Safety Council, is associate professor of surgery in the Chicago Hospital Medical College, and a member of the surgical staff of both the Fort Dearborn Hospital and the American Hospital. He is an enthusiast in

his profession and subordinates all other interests to its demands, besides which he finds time and opportunity to make for the columns of the Manufacturers News valuable contributions relative to the prevention of accidents in manufacturing establishments and also to making the best possible provisions for the insuring of safety to employes. He insistently keeps in the closest touch with the advances made in medical and surgical science and in personality and tehcnical ability has the true success equipment for the work of his exacting profession. The Doctor is an active member of the Association of Industrial Surgeons, the Chicago Medical Society, the Illinois State Medical Society and the American Medical Association. He is affiliated with the Masonic fraternity.

Dr. Kuhn was born at Wellsville, Missouri, on the 27th of August, 1879, and is a son of Philip and Bertha (Cutler) Kuhn. Philip Kuhn was for a number of years actively engaged in farming operations but he eventually removed to Baldwin, Kansas, in order to give to his children better educational advantages, including those of Baker University. Under the administration of President Harrison he served as postmaster at Centralia, Kansas, and his son LeRoy P., of this review, likewise has held himself a loyal advocate of the principles of the Republican party. After having profited fully by the advantages of the public schools Dr. Kuhn pursued a course of higher academic study in Baker University, at Baldwin, Kansas, and he was thus well fortified for the taking up of his technical work in preparing himself for the profession of his choice. He entered the medical department of the University of Illinois, and in the same he was graduated in 1905, with the degree of Doctor of Medicine. For one year thereafter he served as an interne at Palmyra Springs Sanitarium and Hospital, in Wisconsin, where he gained valuable clinical experience. In 1906 he engaged in the general practice of his profession at Fairbury, Livingston county, Illinois, where he remained until the summer of 1911, when he came to Chicago and engaged in the practice of emergency surgery in an office located at 1112 West Thirty-fifth street which was in a small frame building, where now is located the Central Manufacturing District Bank. A special field of practice in which the success of Dr. Kuhn has since proved unequivocal, as indicated by his large and important surgical practice. Dr. Kuhn is a member of the Hamilton Club and of the Central Manufacturing District Club. Mrs. Kuhn is an active member of the Illinois Colony Club and has pleased many social gatherings with her delightful contralto voice. She often sings at some of the most prominent North Side social affairs. They are both active in the Albany Park Methodist church and Mrs. Kuhn is a frequent soloist in this church.

ARNOLD A. KUEHLHORN

It is specially pleasing to accord in this publication a tribute of recognition to the efficient and popular superintendent of that important section of Chicago that is specifically designated as the Central Manufacturing District. This district virtually constitutes a city in itself, with a thorough and effective organization under the control of which not only architectural and other building provision are defined but through the direct medium of which the streets, lights,

water and power facilities, inspection of buildings at regular intervals, and other material provisions are maintained and supervised. In his capacity as general superintendent of these important matters Mr. Kuehlhorn exercises most influential functions, and his service has done much to place and maintain the celebrated district on the high standard that marks it as one of the interesting economic and industrial centers of the world. The value of his interposition is the greater by reason of his being an architect by profession and a man of distinctive initiative and executive ability. The Central Manufacturing District retains on salary its own police force, and this is another department of service that comes under the general supervision of the efficient superintendent of the district.

Mr. Kuehlhorn was born in the city of Milwaukee, Wisconsin, on the 3d of October, 1871, and in the schools of the Wisconsin metropolis he acquired his early education. He thereafter gained a thorough technical knowledge of architectural art and its practical application, through his association with the well known Milwaukee firm of architects, Cranz & Barkhausen, and through later study under the preceptorship of Professor Charles Rau, one of the foremost exemplars of the architectural profession in the city of Vienna, Austria. Mr. Kuehlhorn remained in Vienna about two years and after his return to America he was engaged in the practice of his profession in Milwaukee for a period of about four years. Thereafter he did successful professional work in the states of North Dakota and Texas, and since 1912 he has given his energies to the directing of the multifarious affairs that come under his administration in the office of superintendent of Chicago's famous Central Manufacturing District.

He gives staunch allegiance to the Republican party and while residing in his native city of Milwaukee he was actively interested in local political and civic affairs. In that city he still retains affiliation with Damon Lodge, No. 102, Knights of Pythias. In 1908 Mr. Kuehlhorn wedded Miss Louise Herbst, and the one child of this union is Arnold A., Jr. The second marriage of Mr. Kuehlhorn was solemnized in 1912, when Miss Ella Kotzbach became his wife. They have one child, Orland, and the family home is at 5649 Maryland avenue.

S. SCOTT JOY

As district architect for the important Central Manufacturing District of Chicago, Mr. Joy exercises important functions, and he has had since 1913 the supervision of the buildings in this celebrated district, his technical and executive ability having shown itself most potently in connection with all building operations in his jurisdiction and no similar manufacturing district in the United States being so well arranged and kept in so excellent order throughout as that over which he has supervision. Mr. Joy has greatly enhanced his professional reputation through his effective work as architect and designer of the splendid Midland warehouse, which has been erected at a cost of about one million dollars and is to be the largest structure in Chicago devoted to such purposes, its aggregate floor space to be six hundred thousand square feet and the entire building be of the most modern and approved architectural design and general construc-

tion. C. J. Terminal Building costing $500,000, three hundred and fifty thousand square feet,—a fitting adjunct to the great manufacturing establishments to which Chicago owes much of its civic and material prosperity. The first year of Mr. Joy's official service in the district recorded the expenditure of fully one and one-half million dollars in building improvements and incidental outlays, and the increase in its scope and importance has been noteworthy each successive year since that time, the estimated expenditures for 1917 being in excess of two and one-half million dollars. The able and popular district architect maintains his office at 1118 West Thirty-fifth street, and in the same he gives employment to about twenty assistants.

Mr. Joy was born in the fine little city of Delaware, judicial center of the Ohio county of the same name, and the date of his nativity was November 29, 1875. With a natural predilection for architectural art and practical work in connection therewith, he early determined to prepare himself thoroughly for the profession in which he has since achieved distinctive success. After having gained an excellent academic education in the public schools and in institutions of higher learning, he was variously engaged until he could realize his ambitions purpose and fit himself for the finer phases of the work of his chosen profession. He entered the University of Illinois, in which he completed a thorough course of technical study and practical application of the same, and in which he was graduated in 1900, with the well earned degree of Bachelor of Architecture. In the same year he established his residence in Birmingham, Alabama, where he continued in the work of his profession until 1912, and within which interval he designed and supervised the construction of the building of the Birmingham Trust & Savings Bank, that of the Southern Bell Telephone building in Birmingham, as well as the local building of the Young Men's Christian Association, the large warehouse of the Steiner Brothers, the cotton mills of Munger & Smith and numerous other buildings of important order.

In November, 1912, Mr. Joy resigned his well established business in Birmingham and came to Chicago, and within a few months thereafter he was appointed to his present office, his services as architect for the Central Manufacturing District having been initiated in July, 1913, and his inter-position having proved of great benefit to the district, besides gaining the the unqualified approval of its leading business representatives. He is a valued member of the Central Manufacturing District Club, is affiliated with the Masonic fraternity, including Scottish Rite bodies and the Mystic Shrine, holds membership in the Beverly Country Club, and is affiliated with the Sigma Chi college fraternity. His political allegiance is given to the Republican party.

January 29, 1902, recorded the marriage of Mr. Joy to Miss Anna Peterson, of Princeton, Illinois, and they have three children,—Dorothy, Elizabeth and Robert.

THE ALBAUGH-DOVER COMPANY

Concerning the inception of this now prosperous and important industrial corporation the following pertinent statements have been written: "The Albaugh-Dover Company has made a record significantly typical of American in-

ALBAUGH-DOVER COMPANY

itiative and progressiveness and its founders were three young men whose principal assets at the time were largely summed up in optimism and ability. The business had its inception in 1900, when two brothers, George S. and Henry P. Albaugh, associated themselves with another ambitious young man, Otto T. Dover, and initiated operations in a living room on the West Side of Chicago. They adopted at the start the best of ethical policies relative to commercial enterprise and began operations in such a small and unpretentious way that even the nearest neighbors never suspected that under such conditions was being laid the foundation of what was destined to become a nationally known business institution. It was not long, however, before better facilities were required, and the three young men, whose equipment still consisted principally of ability, courage and determined purpose, removed their headquarters into Chicago's central business district. They leased space in the Como building, on Dearborn street, and here was effected the organization of the present corporation in 1902, the company now basing its operation on a capital stock of two million dollars. With the substantial expansion of the business removal was later made to larger quarters, in the Carter building, at Franklin and Harrison streets. From this time forward the growth of the business was most rapid, and the accommodations in the Carter building proved so inadequate that the company formulated plans for the establishing of a plant that would meet present demands and offer proper opportunity for enlargement as required. In consonance with the progressive policy thus adopted, the company erected in 1906 the first buildings of its present large and well equipped plant, at Marshall boulevard and West Twenty-first street."

It should further be stated that in 1916 the company added materially to the facilities and attractiveness of its plant by the erection of a modern office building of three stories, with frontage on the city park system, and by the construction at the rear of this building of a new day-light building for the gear-cutting shops. The institution as a whole now stands as one of the largest gear-cutting and cream-separator factories in America, and the company employes seven hundred persons, the greater number of whom are skilled mechanics. So significant and pertinent are the following statements that they are specially worthy of perpetuation in this connection:

"The gear products bearing the Albaugh-Dover trademark have established a wide reputation for quality, and it is said that to-day there are but few automobiles and farm tractors that do not use some part produced in the plant of the Albaugh-Dover Company. The capacity in the gear-cutting department alone is ten thousand finished gears daily.

"The 'New Butterfly Cream Separator' produced in the Albaugh-Dover Company's factories uses a patented, easy-cleaning skimming device and is sold direct to the farmer on convenient terms of payment, making it possible for the purchaser to pay for the machine out of the savings he makes. In this department the output of the factory is in excess of one hundred machines daily.

"Another product of the Albaugh-Dover Company is the 'Square-Turn Farm Tractor.' A new factory, in which these machines are built, is established at Norfolk, Nebraska,—the geographical center of the best tractor market. The Square-Turn Tractor embodies a new tye of transmission, known as the 'Giant Grip Drive,' which does away with the clutch and all differential and transmission gears. This improved transmission enables the tractor to steer by its own

power and turn in its own length. The growing demand for Square Turn Tractors already overtaxes the capacity of the new plant."

The three founders of the extensive business now controlled by the Albaugh-Dover Company still continue to direct its destinies, George S. Albaugh being president, treasurer and general manager; Otto T. Dover, vice-president; and Henry P. Albaugh, secretary, he being also the director of the tractor division of the business.

GEORGE S. ALBAUGH

George S. Albaugh, president of the Albaugh-Dover Company, is one of the progressive young business men identified with the manufacturing industries of Chicago. He is a native of Johnson county, Missouri, born August 30, 1871. His education was received in the public and high schools of Ansonia, Ohio. He also attended Earlham College of Richmond, Indiana, and one year at the Ohio Northern University at Ada. For five years he taught school at Lightsville, Ohio, three of which he was principal of the public school. In 1896, he became associated with the Powers, Higley & Company, of Chicago, manufacturers of specialties. For three years he was director of salesmen for this concern, building and training a large sales organization. In 1899, he with his brother, Henry P., organized in a small way their present business and continued for two years as a partnership business, and in 1902, Otto T. Dover was taken in as a member of the firm, and incorporated under the style of Albaugh-Dover Company, who have built a large business in the manufacture of Cream Separators and Farm Tractors.

Mr. Albaugh is a member of the Berwyn Club, in which suburban city he resides. He is fond of outdoor sports and finds his recreation in fishing and hunting. His summer home is at Fox Lake and he also maintains a hunting lodge at Munising, Michigan, where he spends a part of his vacation in hunting. He was married April 25, 1917, to Miss Mabel Harvey, of Jacksonville, Florida.

HENRY P. ALBAUGH

Henry P. Albaugh, one of the three founders of the Albaugh-Dover Company, of which he is the secretary, was born in Johnson county, Missouri, October 9, 1869, a son of Jacob P. and Rebecca (Petry) Albaugh. He was a lad of six years at the time of the family removal to Darke county, Ohio, where he was reared to adult age and afforded the advantages of the public schools. Thereafter he pursued a higher course of study in the National Normal University, at Lebanon, Ohio, where he prepared himself thoroughly for successful work in the pedagogic profession. He devoted six years to effective service as a teacher in the public schools of Ohio and in 1896 he established his residence at North Manchester, Indiana. For about two years thereafter he was employed as a salesman for a Chicago publishing house, and from 1899 to 1900 he gave most effective executive and pedagogic administration as president of Manchester College,

Geo S. Albaugh

at North Manchester, Indiana. In 1900 he removed with his family to Chicago, where, in the same year, he became associated with his brother, George S., and with Otto Dover in establishing the little enterprise from which has been evolved the now extensive business of the Albaugh-Dover Company, the original functions of which included a manufacturing and mail-order enterprise. After the incorporation of the business Mr. Albaugh served nine years as president of the company, and since 1915 he has been secretary, besides which he now has the general management of the tractor department of the business, as noted in the foregoing description of the corporation and its important industrial enterprise. Mr. Albaugh has given not a little time and attention to special work in sales management and business organization, and in this important field he has made a high reputation, with a number of large and influential corporations as his clients. Travel, lecturing and political activity have likewise enlisted his attention, and he has been specially active and influential as a well fortified exponent of the cause of the Republican party. He has been a worker in various campaigns and in 1910 was made his party's candidate for representative of the Fourth district of Illinois in the United States congress, his defeat having been compassed by normal political exigencies.

In Darke county, Ohio, on the 27th of August, 1891, was solemnized the marriage of Mr. Albaugh to Miss Carrie E. Sullenbarger, and they have eight children,—Forrest R., Hazen L., Kathryn R., Anthal E., Liston L., Morton V., David L., and Margaret E.

OTTO T. DOVER

Otto T. Dover, who has been vice-president of the Albaugh-Dover Company from the time of its incorporation, in 1912, has been one of the vigorous and resourceful factors in the development of the remarkably successful industrial and commercial enterprise of which he was one of the founders, as duly noted in the preceding article descriptive of the company.

Mr. Dover was born at Manitowoc, Wisconsin, May 19, 1871, a son of Ole T. and Barbara (Rebne) Dover, representatives of the fine Scandinavian element of citizenship that has played a most benignant and important part in the civic and material development and progress of the Badger state. After completing the curriculum of the public schools Mr. Dover further fortified himself by a course in the Wisconsin State Normal School at Oshkosh, and in 1897-8 he was a successful and popular teacher in the district schools of his native state. From 1898 to 1900, with headquarters in Chicago, he was state manager for Wisconsin and Michigan for Powers, Higley & Company, a concern engaged in the manufacture of specialties and in the latter year he became one of the founders of the business now conducted by the company of which he is the vice-president.

CHICAGO VENEER COMPANY

Chicago Veneer Company was founded in the year 1888 in the city of Chicago, where it operated veneer mills until 1902, when it moved to Burnside, Kentucky,

and built a very large veneer plant in the heart of the finest yellow Poplar timber belt in the country.

In 1914 the Company built another very large veneer plant at Clarendon, Arkansas. This Clarendon (Arkansas) plant is in fact probably the largest, and without question the most modern, rotary veneer mill in the country, if not in the world, and a specialty is being made at that plant of high grade rotary cut gum veneer.

The Burnside (Kentucky) plant is still being operated in full force and in addition to rotary cut poplar it is producing large quantities of rotary cut Oak, Chestnut, Ash, Yellow Pine, Walnut and other rotary cut veneer.

A few years ago the Company established a large warehouse and office in the city of Chicago and a complete stock of the products of the two mills is being carried on hand at this warehouse, which is now located at 15th Place and Western avenue, Chicago. In fact the entire business of the Chicago Veneer Company is now being conducted from this office.

The officers of the corporation are: Benj. W. Lord, President; J. S. Anderson, First Vice-president; S. J. Glanton, Treasurer; and H. A. Webster, Secretary.

WRIGHT & COMPANY

With main offices at 3400 South Racine avenue and well equipped yards at 1441 Fleetwood street and at Thirty-fourth street and the Chicago Junction Railroad, this concern controls a large and substantial business in the handling of coal wholesale and retail with facilities of the best modern order, special attention being given to handling the celebrated "Premium" coal produced in Saline County, Ilinois, by a representative coal-mining company which maintains its headquarters at Chicago.

In the year 1905 Tracy G. and Charles C. Wright, brothers, formed a copartnership and engaged in the retail coal business at 1041 West Thirty-fifth street, where they had made requisition for about sixty-six thousand square feet of ground space, provided on the same adequate buildings and also a sidetrack capable of accommodating fourteen cars, this track having direct connection with the line of the Chicago Junction Railroad. Under vigorous and progressive management the business expanded substantially in scope and about 1908 the firm found it expedient to augment its operations by establishing a department for the handling of coal at wholesale also. Under these conditions cumulative growth attended the enterprise and finally, in 1915, the firm leased about ninety-five thousand square feet of ground at 3400 South Racine avenue, where they made the best of provisions for the handling of the constantly increasing trade, the plant at this location having trackage for the accommodation of twenty-eight cars and making direct connection with the Chicago Junction Railroad.

In 1913 the firm had opened well equipped yards at 1441 Fleetwood street, where is utilized a ground area of sixty-five thousand feet. Each of these yards has several hundred feet of dockage on the Chicago river, and thus gain the best of transportation facilities by water as well as by rail. The concern now handles an average of more than four thousand carloads of coal annually. As previously

noted, special attention is given to the handling of "Premium" coal, a steam coal of widely recognized superiority and known as the highest grade of coal mined in the west. When Wright & Company initiated the handling of the Premium coal in Chicago none of this product was being delivered here by wagon, and the firm began its exploitation of this special product in 1911. In the interim it has developed in the handling of the Premium coal a notably large business, its substantial trade in the same involving the handling of fully one hundred and seventy-five thousand tons annually. In providing fuel for apartment buildings, hotels, etc., the firm also specializes in the handling of Pocahontas coal, but in its extensive yards are maintained full lines of the various grades of soft coal. The unexcelled operative facilities controlled by the firm are such that within a period of twelve hours after the reception of orders the concern can make car deliveries both at the Union Stock Yards and in the Central Manufacturing District, in each of which important industrial centers Wright & Company control a large business. In five hours the firm has facilities for the making of wagon deliveries within the distance between Sixty-third street, on the South Side, and Devon avenue, on the North Side, and from the lake east to Fortieth avenue, on the west. The firm has installed at its yards a modern power crane for the loading and unloading of coal, and this provision contributes much to facilitating the service. The firm has membership in the Chicago Coal Merchants' Association and is one of the leading concerns of its special line of industrial and commercial enterprise in the western metropolis.

Tracy G. Wright, senior member of the firm of Wright & Company, was born at Lisbon, Kendall county, Illinois, and was a boy at the time of the family removal to Chicago, in 1880. After having availed himself of the advantages of the public schools of this city he entered the employ of Edwin F. Daniels & Company, engaged in the retail coal trade, and thereafter his advancing business career involved his association with various concerns. He finally became president of the United States Coal Company, and he resigned this office in 1905, at which time he became associated in the establishing of the substantial and representative business enterprise with which he is now connected, as noted in preceding paragraphs.

Charles C. Wright, the junior principal in the firm of Wright & Company, likewise was born at Lisbon, Illinois, and received his early educational discipline principally in the public schools of Chicago. For two years prior to becoming associated with his brother in founding the business now controlled by Wright & Company, he had been identified with the printing business in Chicago, and since that time he has been a resourceful factor in the developing of the important business of this firm. He is one of the active members and supporters of the Central Manufacturing District Club.

THE ACME CABINET WORKS

Under this title is conducted a successful and important industrial enterprise that was founded by Frederick Bletzinger, who is vice-president and general manager of the company, the well equipped and essentially modern plant being situated at 1240 Fullerton avenue.

Mr. Bletzinger, to whose energy and ability has been primarily due the development and upbuilding of the substantial business of which he is the executive head, was born in the Kingdom of Würtemberg, Germany, on the 29th of May, 1864, and he bears the full patronymic of his honored sire, Frederick Bletzinger, Sr., who passed his entire life in that favored section of the German empire. Mr. Bletzinger attended the excellent schools of his native land until he had attained to the age of fourteen years, when he began an apprenticeship to the trade of cabinetmaker, in which he acquired the superior skill that marks the thorough German system of apprenticeship. In 1881, when seventeen years of age, Mr. Bletzinger severed the ties that bound him to home and fatherland and, with purposeful ambition and high courage, set forth to make for himself a place of independence in the United States. Upon landing in the land of his adoption he forthwith made his way to Missiouri, and after having been employed for several months at Clarence, that state, he went to Kansas City, Missouri, where he folowed the work of his trade for the ensuing five years. At the expiration of this period, in 1886, he came to Chicago, where he obtained employment in the manufactory of the Brunswick-Balke-Collender Company, the well known manufacturers of billiard tables and high-grade office fixtures and furniture. He continued in the employ of this company six years, and from the cabinet shop he advanced to a position as expert draftsman and detail man. Upon severing his connection with this representative corporation Mr. Blezinger formed a partnership with Jacob Heather, under the title of Bletzinger & Heather, and, in 1892, they engaged in cabinet manufacturing enterprise on a small scale, with headquarters on Wells street and with a force of twelve employes. In 1898 the firm sold its plant and business to the L. A. Becker Company, manufacturers of soda-water fountains, and in the factory of this company Mr. Bletzinger held for the ensuing thirteen years the office of superintendent. He then resigned his position and founded the Acme Cabinet Works, of which he has since continued the executive head and superintendent, the president of the corporation, Alfred D. Plamondon, taking no active part in the management, as he has other large and important capitalistic and industrial interests that require his attention.

The special function of the Acme Cabinet Works is the manufacturing of the finest grade of store and office fixtures and special cabinet work for soda fountains. In the well equipped factory employment is given to a force that varies from twenty to thirty skilled mechanics, and the products are now sold in all parts of the Union, the substantial and prosperous business having been based on the high-grade workmanship and effective service rendered. The concern has membership relations with the Chicago Association of Commerce. Entirely through his own ability and earnest endeavors has Mr. Bletzinger advanced to the goal of definite prosperity and his character and achievement are such that he has gained secure vantage-ground as one of the substantial business men and loyal and progressive citizens of the western metropolis, where he has won the staunchest of friends in both business and social circles. In politics he maintains an independent attitude and gives his support to men and measures meeting the approval of his judgment.

In 1889 was recorded the marriage of Mr. Bletzinger to Miss Theresa Glander, of Chicago, and she passed to the life eternal in 1901, being survived by two children, Frederick, Jr., and Lillian, the latter of whom remains at the paternal

home. Frederick Bletzinger, Jr., was born, reared and educated in Chicago and is now designer and salesman for the corporation of Jacob Lederer, designers and manufacturers of drug-store fixtures, Chicago. He wedded Miss Ella Ferguson, of this city, and they have two children—Marguerite and Elenore.

The second marriage of Frederick Bletzinger, Sr., was solemnized in December, 1906, when Miss Antonia Jensen became his wife, and their pleasant home is at 2853 Wilson avenue, in the beautiful north shore district of Chicago. They have no children.

GARDEN CITY CAN COMPANY

The main office and factory of this substantial and well ordered manufacturing concern are established at 1210-12-14 Fry street, and Henry Henry is president of the company, having been its founder and his energy and executive ability having constituted the force that has effected the development of a most successful industrial enterprise in the manufacturing of tinware and specialties in sheet-metal work, particular attention being given to the manufacturing of telephone condenser-cans of the best grade and design.

In the year 1902 Mr. Henry purchased the plant and business of the City Can Company, the establishment of which was located at the same place as that now utilized by Mr. Henry, and after thus paying for the machinery and good will of a concern that had been unprofitably operating, he found his available capital reduced to the sum of seventy-five dollars. He was equipped with the full measure of determination and self-reliance, as is evident when it is stated that he had had no previous experience in the line of business with which he thus identified himself, but he brought to bear in the connection his characteristic energy and good judgment, applied himself with unabating zeal and finally brought to his business a success worthy of the name. At the time he assumed control of the new business Mr. Henry utilized one floor of the building, with an area of about three thousand square feet, and his original force of employes numbered fifteen persons. The previous owners of the business had gained the supporting patronage of a number of representative Chicago corporations, including the Western Electric Company and the Automatic Electric Company. These institutions continued to avail themselves of the productive facilities of Mr. Henry's factory, the present title of the Garden City Can Company having been adopted by him when he assumed control. For the two electric companies mentioned Mr. Henry continued to manufacture condenser cans, and in the meanwhile he made a vigorous campaign to expand his clientele. Through his well directed efforts as an executive and the efficiency of service given by his factory, Mr. Henry soon gained the Western Electric Company, the Automatic Electric Company, the Stromberg-Carlson Company, the Kellogg Switchboard Company, and the American Electric Telephone Company as regular customers. His gross sales for the first year (1902) aggregated thirty thousand dollars, and each succeeding year has recorded a steady and normal increase in the business, the transactions for 1916 having represented more than seventy thousand dollars. From time to time Mr. Henry has found it necessary to augment his manufacturing facilities, and he

now occupies the entire four floors of the substantial building in which he initiated operations, at 1210 Fry street. Here he utilizes a floor area of twelve thousand square feet, and each department is maintained at the highest standard in mechanical facilities, in the retention of expert artisans and in general equipment. Continuous employment is given to a force of fifty persons and a large percentage of the output of the factory is in the line of telephone condenser-cans, the capacity of the plant being for the production of ten thousand cans daily. Mr. Henry is to be congratulated on the unequivocal success that has attended his vigorous and progressive regime as a captain of industry and concerning him more specific mention is made in the paragraphs that follow.

HENRY HENRY

Henry Henry, president of the substantial industrial enterprise described in the preceding context, was born in the city of London, England, on the 28th of August, 1854, and in the world's metropolis he continued to attend school from the age of nine years until he has celebrated his seventeenth birthday anniversary. Soon afterward, in 1871, he came to the United States and established his residence in New York City, where he learned the trade of shoemaking, in which he became an expert workman, so that he readily found employment when desired in various departments of leading shoe factories in the national metropolis. Mr. Henry remained in New York until 1880, when he came to Chicago and secured a position as traveling salesman for the Garden City Shoe Company, which he represented through the territory of the middle west for the ensuing four years. For three years thereafter he held a similar position with the Frehling Shoe Company, and thus it may readily be seen that he made a radical change of vocation when he finally became proprietor and is now president of the business which he has since conducted under the title of the Garden City Can Company. He is actively identified with the Chicago Association of Commerce and is a loyal supporter of its progressive civic and commercial policies. In politics Mr. Henry is found arrayed as a stalwart advocate and supporter of the cause of the democratic party and in a fraternal way he is affiliated with the Knights of Pythias.

In New York city, on the 2d of July, 1870, was solemnized the marrriage of Mr. Henry to Miss Sophia Levy, who was born in the city of Poland, and concerning the children of this union the following brief data are available: Charles died in 1890, at the age of nineteen years; Rose is the wife of Louis Stein, of Detroit, Michigan; Sarah is the wife of Ralph Newman, of Chicago; Kuhns is engaged in the insurance business in Chicago; Hawley likewise is identified with business interests in Chicago; Phoebe is the wife of Samuel Gold, of this city; Teresa is the wife of Albert Smith, of Chicago; Morris is factory superintendent and general manager of the Garden City Can Company and is proving a most valuable assistant to his father in the direction of the business; Esther the wife of Joseph Rosenberg, of Chicago; and Birdie is the wife of Emanuel Mendelshon, of Chicago.

Of Morris Henry, the youngest of the sons and actively associated with his fathers' business, it may be stated that he was born in Chicago, on the 18th of December, 1883, and that he here received excellent educational advantages in his youth. After leaving school he learned the trade of die and tool making, his apprenticeship having been served in the establishment of the Stromberg-Carlson Company, in the employ of which concern he continued several years. Thereafter he was employed at his trade in the service of the Walsh-Lindh Manufacturing Company until the time when he assumed his present position, that of superintendent of the Garden City Can Company. Morris Henry is affiliated with the Illinois Traveling Men's Association and with the Knights of Pythias. On the 4th of August, 1906, he wedded Miss Sadie Vanderlike, of Rochester, New York, and they have one child, Frank, who was born March 8, 1908.

THE KRASBERG MANUFACTURING COMPANY

In the industrial annals of Chicago there have been numerous instances where has been recorded remarkable success achieved in the minimum period of time, and in no case has such success been more pronounced or rested on a firmer basis than in that of the Krasberg Manufacturing Company, which is to be designated as one of the younger manufacturing concerns of the western metropolis and the advancement of which has been of the most normal and substantial order from the time the business was founded, in 1915. Not through the importunities of insistent salesmen or through the medium of comprehensive advertising has the business of this company been developed to large proportions within a brief period of time, but the result has been gained through the recognized superiority of the products, which have constituted their own best advertising, as assured satisfaction on the part of one patron has led to recommendations that have gained other supporting patronage. In short, in the domain of tool manufacturing, this company has made a record of almost phenominal advancement, and it is doubtful if in the history of tool-manufacturing in the middle west there has been another parallel record of such marked success within a limited period of time. The result is that the manufactory of the company is now known as one of the largest and best equipped institutions of its kind in the states of the middle west, and the splendid development has been the diametrical result of fine workmanship and definite superiority in connection with the varied high-grade output. This vigorous young corporation manufactures a fine line of tools, dies, jigs, and mechanical fixtures, and special attention is given to the manufacturing of the highest grade of motors for phonographs, as well as accessories and parts utilized in connection with phonographs for both commercial and amusement purposes. The trade of the concern now extends throughout the United States and the Canadian provinces, and the well equipped plant is situated at 412 Orleans street. It was at 226 Orleans street that, in 1915, was instituted on a small scale the enterprise which has since been developed to one of large volume, and the founder of the business was Rudolf Krasberg, whose name gives title to the present company, of which he is the president. The company was incorporated in April, 1916, and from the

beginning the executive corps has remained the same,—Mr. Krasberg being the president of the company; Arvid Nihlson, secretary; and Michael Wurum, treasurer. Incidentally it may be noted at this point that the company is represented in membership in the Chicago Association of Commerce and the Chicago Machinery Club.

When operations in the manufacturing of tools were instituted by this company the floor space utilized was but twenty-five hundred square feet, and the prime commercial asset was the technical ability and unassailable reputation of Mr. Krasberg and his valued coadjutors, each of the three principals being skilled in mechanical artisanship and each having held responsible positions in connection with large and well known manufactories in Chicago and other cities. Within a short time after operations had been initiated, orders came to the new institution with such rapidity that it became evident that larger quarters must soon be secured to meet the increasing demands, and for a time a considerable part of the work had to be done in other factories, though under the closest and most punctillious supervision of one of the officers of the Krasberg Company. In the earlier stages the company gave employment to only three machanics, and these machinists could by no means have applied themselves more assiduously to practical work than did the three principals of the firm and the later corporation. At the expiration of six months removal was made to 412 Orleans street where was leased one-half of an entire floor, giving a total space of six thousand square feet. Here the company enlisted the services of a force of seventy skilled mechanics, and for three months work was vigorously carried on both day and night. The results were cumulative and within three months it was found imperative to utilize more floor space, the remaining one-half of the original floor being brought into requisition at this juncture. The summer of 1917 finds the company utilizing more than two floors of the substantial industrial building at the location noted, with an available floor space of more than twenty-five thousand square feet and with a force of two hundred operatives. Both day and night shifts are arranged and thus there is no cessation in the activities of the plant save on Sundays. Available floor space being inadequate to handle the orders for tools and machinery amounting to over $600,000, plans are being made for the erection of a large factory building having a floor space of at least 100,000 square feet with additional ground for expansion. These statements indicate adequately the really wonderful progress made by this stirling company, and its success is founded unequivocally on merit. Supporting patronage is given by many large and representative industrial concerns, among which may be noted the Ford, the Packard and the Willis-Overland automobile companies, the Western Electric Company, the Wagner Electric Company, the Emerson Electric Company, the Findeisen Kropf Manufacturing Company, the Root-Vandervoort Engineering Company, of Moline, Illinois; the General Electric Company, and many other large industrial concerns in Chicago and other manufacturing centers.

On the 1st of May, 1917, The Krasberg Manufacturing Company completed its first motor for phonographic use, and the great superiority of the device over others of similar order resulted in a remarkable sale, the demands being such that soon one thousand of the motors were manufactured each week. Arrangements have now been perfected for the manufacturing of two hundred

and fifty of the motors daily, and this phase of the business has become one of the most important. It is worthy of note that thirty days prior to the finishing of the first phonographic motor in the factory of the company not a single tool was on hand for the making and perfecting of the device. Prompt and decisive action was taken to supply this deficiency and the end of the month showed the first perfect motor turned out. The operations of the company for the first year indicated transactions to the amount of about twenty-five thousand dollars, and at the time of this writing, in the summer of 1917, the operations clearly indicate an average annual business of three hundred thousand dollars. The president of the company gives himself with characteristic energy and ability to directing the practical and executive administration of the large and substantial business, and concerning him and his valued associates individual mention is consistently made in paragraphs that follow this article.

RUDOLPH KRASBERG

The vigorous and resourceful president and general manager of the company whose history is outlined in the preceding context, is well worthy of classification among the representative young captains of industry in Chicago, and his success and advancement represent the result of his well directed endeavors and his recognized technical and executive ability as applied in the development and upbuilding of one of the prosperous industrial enterprises of the western metropolis.

Mr. Krasberg was born at Charlottenburg, now virtually an integral part of the city of Berlin, Germany, and the date of his nativity was November 11, 1879. In Berlin he continued his studies until he had made good use of the advantages of the gymnasium, corresponding to the high school of the United States, and at the age of fourteen years he entered upon an apprenticeship to the machinist's trade, in the government shops at Spandau, nine miles west of Berlin. Here he was required to apply himself diligently not only during the working hours of each day but also five hours on each of four nights of the week, and Sundays were spent in study on technical subjects. It is needless to say that thoroughness and efficiency were inseparable from this strenuous discipline and finally the ambitious youth at the age of 17 acquired such skill that he was given his diploma as a machinist and mechanical engineer. As a journeyman at his trade he traveled two thousand miles through Germany, where he found employment in various manufacturing establishments, taking this course in order to diversify and amplify his technical experience and facility. With his itinerary as a journeyman he found employment in sixteen different shops within a period of eighteen months, and shortly afterward, in the year 1890, he severed the ties that bound him to the fatherland and came to the United States, where he felt assured of better opportunities for advancement through individual effort. Upon his arrival he was more or less handicapped by lack of knowledge of the English language, and he made his way to Poughkeepsie, New York, where he found employment in a cream-separator manufactory, his wages at the start being one dollar and twenty-five

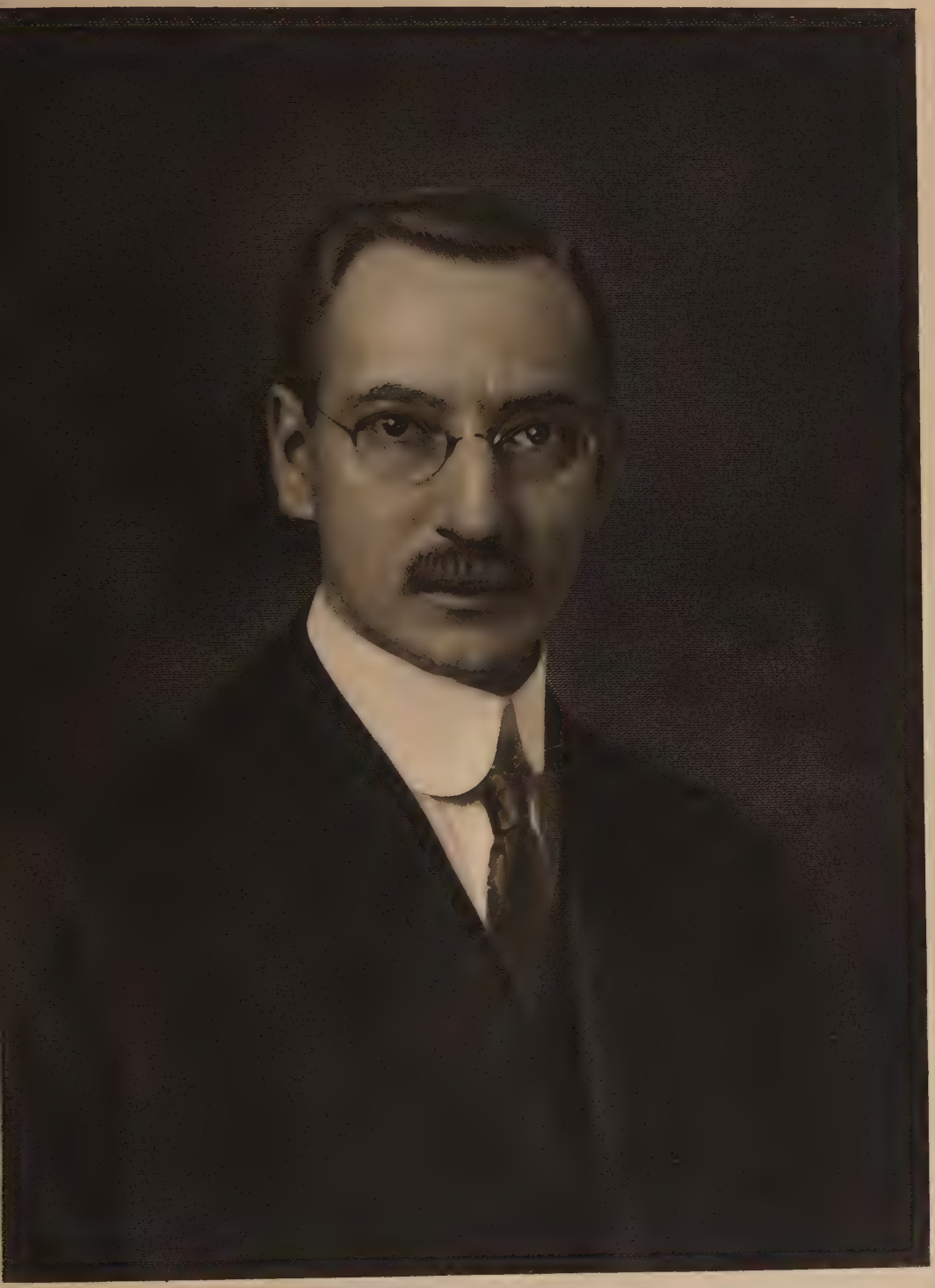
cents a day. From time to time increases in compensation indicated appreciation of his ability and effective service, and in the latter of the two years he remained with this concern he received three and one-half dollars a day. His desire to acquire knowledge of other sections of the country and to familiarize himself with American customs and institutions, then led him to indulge his wanderlust and he had no difficulty in finding renumerative employment as an expert toolmaker. He worked as toolmaker, toolroom foreman, superintendent and sales engineer in various large factories in different eastern states and finally, in 1913, he came to Chicago. Here he obtained a good position in the tool designing department of the great plant of the Western Electric Company, to which he had been sent from the company's shops in New York city, where he had been in charge of tool-designing department. After one and one-half years of effective service in the Chicago plant of the Western Electric Company, Mr. Krasberg resigned his position, to accept a place with the Monarch Tool & Machine Company. His next change was to the employ of the Illinois Tool Company, and with this corporation he continued until he initiated his independent activities as a tool manufacturer. A record of his career since that time is virtually embodied in the foregoing history of the company of which he is president.

Mr. Krasberg is not only a skilled machinist but has also developed marked inventive talent. He has invented and patented a number of advertising novelties of unique mechanical design and construction and also a number of ball-bearing mechanisms. His company is soon to place on the market his most original and valuable invention,—a resilient or flexible automobile tire that depends upon the action of springs for its resiliency and that is especially adapted for use on heavy trucks. This tire has been put to the most thorough tests and is destined to come into extensive use, owing to its proved durability and general superiority. Mr. Krasberg is thoroughly appreciative of the land of his adoption and is loyal and public-spirited in his civic attitude. In politics he is independent of strict partisan lines.

At Poughkeepsie, New York, in 1901, was solemnized the marriage of Mr. Krasberg to Miss Alma Kuhlen, who was born in Germany and who was an infant at the time of her parents' immigration to the United States. Mr. and Mrs. Krasberg have two children,—Harry B., who was born at Schenectady, New York, in 1905, and Bruce, who was born in the same city, in 1907.

ARVID NIHLSON

In the rounding out of the record concerning the Krasberg Manufacturing Company it is pleasing to accord recognition to its three executive officers, and of this corps Mr. Nihlson is the efficient secretary and chief engineer. Mr. Nihlson was born in Svedala, Sweden, on the 3d of May, 1879, and is a son of Nils Nihlson, who was a man of superior education and much of whose active life was devoted to teaching in the schools of Sweden. In one of the buildings utilized for residential purposes by the members of the faculty of this institution occurred the birth of Arvid Nihlson, subject of this review,



R. Kraasberg.

and thus he was literally reared under academic influences. He received a collegiate education, though he initiated his association with practical business affairs when he was a lad of fourteen years, his training thus running parallel along the two lines which make for proper development of character in the formative period of life. At the age noted, Mr. Nihlson began his apprenticeship to the trade of machinist and mechanical engineer, and he acquired thorough skill in the vocation, the while he continued his educational work also until 1903, when he came to the United States. In that year he arrived in Chicago and obtained employment in the shops of the Stromberg & Carlson Telephone Company, where he gave his attention to experimental tool work. At the expiration of eighteen months he left this position to take a place in the Northwestern locomotive repair shops of the same railroad, where he was assigned to work repairs of locomotives for a period of eleven months. At that time it was his intention eventually to identify himself with the automobile garage business, so he took a place as gasoline motor constructor in the Continental Motor Company, but at the expiration of three years he resumed work at his trade, that of toolmaking, in which he was a recognized expert. His ability brought to him preferment as expert of the tool department of the extensive works of the Western Electric Company, and a year later he was transferred to a responsible position in the company's general manufacturing department. A year later he was assigned to the drafting department, and in these various positions he added materially to his technical experience and facility. Prior to leaving his native land he had held important positions in the line of his trade, including that of superintendent of one of the jobbing shops in the city of Karlskrona, which is the principal station of the Swedish navy. His character and technical ability were so estimated by his employers that when he decided to come to America they voluntarily gave him letters of high recommendation, not only as an expert tool designer and draftsman, but also as a young man worthy of the fullest measure of confidence and esteem. His business coadjutor and valued friend, Mr. Krasberg, president of the Krasberg Manufacturing Company, has stated with marked appreciation that Mr. Nihlson is a man who applies himself with diligence and thoroughness to every thing he undertakes, and that he is undoubtedly one of the finest craftsmen in his line to be found in Chicago, with ability successfully to achieve the best results in mechanical designing and construction work of the finest type, especially tools, machinery, motors, etc.

In politics Mr. Nihlson is independent, and he is affiliated with the Independent Order of Odd Fellows and the Independent Order of Switiod. His residence is at 1643 Balmoral avenue.

On the 8th of May, 1912, Mr. Nihlson wedded Miss Hilda Bengtson, who likewise was born in Sweden, and they have two children: Arvid Bernhard, and Edla Sylvia Walborg.

MICHAEL WURUM

The treasurer of the Krasberg Manufacturing Company is an expert tool and die maker and is a vigorous and ambitious young man who has been defi-

nitely influential in the upbuilding of the large and substantial business now controlled by the company of which he is a popular executive. He was born in the town of Nagy-Kikinda, Hungary, on the 28th of April, 1888, and is a son of Stephen Wurum. He attended school until he was twelve years of age and then began an apprenticeship to the trade of machinist. His youthful ambition was shown in a significant way during the greater part of his period of apprenticeship, as he applied himself diligently to study in night schools and thus made his practical experience and educational advancement keep pace with each other. He completed his apprenticeship in 1902, and thereafter he worked as a journeyman at his trade in the twin city of Buda-Pesth. At this time he found his ambition to have a dominating trend in a desire to see more of the world and to extend his experience. He had in the meanwhile given to his mother the greater part of his earnings, and she had carefully conserved the same, so that she was able to give him financial aid when he set forth on his journeys. He visited the cities of Vienna, Berlin and Bremen, and in each of them found employment at his trade. In 1905 he came to America, and on the 5th of April of that year he landed in the city of Philadelphia, Pennsylvania, a stranger in a strange land and quite unfamiliar with the English language. Ambition and industry recognize no enduring handicap, and finally the sturdy young Hungarian found employment at the Baldwin Locomotive Works, at fair wages. For the first three weeks he was assigned to night work and for the next five weeks he worked on the day shift as a machinist. He saved his earnings and finally went to New York city, whence he continued his journey to Elizabethport, New Jersey. Here he found employment in the shops of the Singer Sewing Machine Company. He was assigned to the tool department and continued in the employ of this important corporation two and one-half years, during which he attended night school with regularity. Determined to find more remunerative employment, he returned to New York city, where he obtained a good position at better pay, in the tool-manufacturing department of the Crocker-Wheeler Company's plant. Here he remained five months, and in the meanwhile occurred a most important event in his career, for, on the 18th of July, 1907, he wedded Miss Katherine Reijes, daughter of Androw Reijes, of Elizebethport, New Jersey. Mr. Reijes about this time conceived the idea of effecting the family immigration to western Canada, and in consonance with his plans he and his son-in-law, Mr. Wurum, made their way to Winnipeg, Canada, with the intention of securing land and turning attention to agricultural pursuits. Mr. Reijes was a carpenter by trade and in the west he found employment at good wages. Mr. Wurum, however, was not pleased with the prospects offered in that section, but in Winnipeg he found employment that sufficiently recouped his finances to enable him to return eastward as far as Chicago. He arrived in this city in the fall of 1909, and found his exchequer once more depleted. Under these conditions he found employment in the tool department of the Pullman Company. Two months later he sent for his wife, and after remaining several months with the Pullman Company he went to Harvey, Illinois, where he found employment at higher wages. He was not satisfied with incidental environment and conditions, however, and after the lapse of five months he returned to Chicago and entered the employ of the Western Electric Company. After two years of steady employment he left the service of this company for the purpose of taking his wife for a visit to her old

home in New Jersey. After an extended visit they returned to Chicago, and for the ensuing year Mr. Wurum was again an employe in the tool department of the shops of the Western Electric Company. For the next eight months he was in the employ of the Miehle Printing Press Company, and he gave six months of service at the plant of the American Can Company. The ensuing six months found him identified with farm enterprise near Flemington, New Jersey, and he returned to Chicago in 1914, just before the outbreak of the great European war. Here he entered the employ of the A. C. Clark Company, which failed in business five months later. For six months he was employed by the Monarch Tool Company where he became acquainted with Mr. Krasbery who recognized at once his superior ability and the making of a good executive and his next decisive action was in becoming associated in the establishing of the Krasberg Manufacturing Company, of which he has since continued the treasurer and superintendent and to the success of which his contribution has been distinct and effective as pointed out with evident satisfaction by his friend the president of the company. He and his wife have a pleasant home in Chicago and the same is brightened by the presence of their two children, Juliana, born in 1908, and Goldie Evelyn, born in 1912.

CHICAGO SURGICAL AND ELECTRICAL COMPANY

Determined action born of self-confidence and an ambition based on technical ability and an earnest desire to achieve success worthy of its name led to the establishing of what has become one of the large and important industrial enterprises in its line, that of the company whose title initiates this paragraph, and concerning the inception and development of the business a more consistent record could not be asked than that appeared in a brochure recently issued by the company. But slight elimination and paraphrase are indulged in the reproduction of the quotations from this article:

"The Chicago Surgical and Electrical Company was founded in October, 1908, and in 1910 it was incorporated under the laws of Illinois, with a capital stock of ten thousand dollars. The first few years were devoted almost entirely to experiments and tests, together with the designing and perfecting of surgical and electrical apparatus used and needed by hospitals, physicians, colleges, universities and the laboratories of health departments. Within this period the company became well known among the large institutions of science in this country and built up an enviable reputation as a producer and manufacturer of accurate instruments and high-grade apparatus. As the company progressed, its high reputation in that regard grew accordingly. In May, 1914, the growing demand for its apparatus forced an increase in the capital stock to twenty-five thousand dollars. Real manufacturing on broad lines then began. The company had by this time perfected its products and acquired valuable patents amply protecting the same. An extensive advertising campaign was started. Catalogues were issued and sent broadcast throughout the land. As a result the sales increased every month and the profits started to accumulate. Since May 1, 1914, the company has paid quar-

terly cash dividends. A part of the surplus profits have been put back into the business each year, and this has enabled the company continuously to increase its sales and output. The company now has many selling agencies among the principal large dealers and jobbers in the United States and Canada."

The original location of the Chicago Surgical and Electrical Company, in 1908, was at 704 North Halsted street, where Tiodolf Lidberg, president of the corporation from its inception, individually and alone instituted the manufacturing of surgical instruments, on a very modest scale. In the autumn of the following year removal was made to more eligible quarters, at 859 North Franklin street, where was obtained a floor space of twenty-five hundred square feet, and the original corps of two expert mechanics was increased to six. To facilitate operations in connection with the rapidly growing business, the company was incorporated in February, 1910, with a capital stock of ten thousand dollars, and the force of employes was thereafter increased to twelve skilled artisans.

Normal and substantial expansion continued and indicated the high estimate placed upon the varied products of the company's factory, and finally the quarters on North Franklin street proved entirely inadequate, so that, in March, 1916, removal was made to the present location, at 314-324 West Superior street, where seven thousand square feet of floor space are in requisition and where employment is given to twenty-five persons in the manufactory proper.

In the year 1911 the company began the manufacturing of electrical apparatus for laboratory and research purposes, and in this department such splendid advancement has been made that at the present time no other concern has a higher reputation for the production of the fine type of mechanisms and devices in this line, including specially designed bacteriological incubators, indispensable in all well ordered laboratories in which is prosecuted the study of both animal and plant micro-organisms. The incubators are unexcelled for practical use by health departments, and the same applies to the warm stages, centrifuges, etc., manufactured in the well equipped laboratories and factory of this company. Leading universities, colleges and hospitals utilize the company's laboratory apparatus in research work and demonstration, and with the advance of medical and surgical science in general there comes an ever increasing demand for such high-grade appliances, accessories and instruments as are manufactured by the Chicago Surgical and Electrical Company. Of the electric incubators, which have met unqualified approval on the part of the highest authorities, the company manufactures many different sizes, and all are equipped with the patented electro-thermostat owned and controlled by the company. From literature issued by this corporation are taken the following statements: The fundamental principle of our laboratory apparatus is heat regulation, which we have solved satisfactory. We are pioneers in the manufacture of electrically heated bacteriological incubators that can be sold at a price that defies competition and is at the same time very attractive to the owner of a laboratory." The company's electro-thermostat, duly patented, has proved a revelation in heat control for the incubators and for use in other ways where accurate temperature control is essential, and the catalogues is-

sued by the corporation give all necessary information concerning the varied and valuable products issued from its factory. The No. 5 electro-thermostat, with condenser, that is manufactured by the company was invented and patented by its president, Mr. Lidberg, and the same holds true in the case of the No. 7 and No. 8 electrically heated "warm stages" for the microscope, they being the only appliances of its kind now on the market. Mr. Lidberg is the inventor and patentee also of the No. 29 combination electric heater and pencil-type thermostat, and his fine technical skill and scientific knowledge have been the basis upon which the substantial business of the company has been largely founded and developed. The products of the factory and laboratories of this corporation are in use by leading educational institutions in the various parts of the Union, as well as in hospitals, research laboratories and in connection with the work of governmental and health departments. The trade has been extended into all parts of the United States, as well as into the Canadian provinces and Cuba, and in various cities of the Union the goods are handled in a direct way by leading dealers, among whom may be noted the following named: T. S. Sargent & Company, Chicago; Central Scientific Company, Chicago; A. H. Thomas Company, Philadelphia; E. Leitz, Inc., and Eimer & Amend, New York city; Bausch & Lomb Optical Company, of Rochester, New York, and Spencer Lens Company of Buffalo, N. Y.

Commercial expediency, involved in the continuous expansion of the business, led the Chicago Surgical and Electrical Company to increase, in 1916, its capital stock to one hundred thousand dollars, and the officers of the corporation are: Tiodolf Lidberg, president; John W. Morsbach, secretary; and L. Hansen Dall, treasurer. Of the president and founder of the company more specific mention is made in following paragraphs, as well also as of the treasurer.

TIODOLF LIDBERG

The president of the Chicago Surgical and Electrical Company was born near the fair old city of Stockholm, Sweden, on the 13th of August, 1875, and is a son of Wilhelm and Henny (Nersen) Lidberg. After careful preliminary discipline in the schools of his native land he there entered the Norrköping Polytechnical College, in which he graduated in the class of 1893, after the completion of a thorough course in chemistry, electrotherapeutics and mechanics, following which he took the post-graduate course in the Royal Polytechnical College, in the city of Stockholm. In October, 1895, at the age of twenty years, Mr. Lidberg came to the United States and assumed a position in the mechanical department of the American Type Telegraph Company, New York city, with which he continued his alliance until the 1st of January, 1897. In the following March he came to Chicago and accepted a position in the mechanical department of the American Electric Telephone Company, where he was placed in charge of the testing department. In 1899 he resigned his position and became consulting engineer for the firm of E. Salich & Company, and in the autumn of the same year he effected the organization of the

Continental Electric Telephone Company, with offices on Wells street, this company having retired from its field of enterprise a year later. In 1900 Mr. Lidberg organized the Swedish-American Telephone Company, and of the same he continued the vice president and general superintendent until May 30, 1908, when he sold his interests in the business. In the autumn of that year he laid the firm foundation for the industrial enterprise that has since developed into the large and prosperous business controlled by the Chicago Surgical and Electrical Company, an outline of whose history has been given in the preceding article.

Mr. Lidberg is a man of exceptional inventive talent and has been further fortified by his thorough technical training and practical experience. In the electrical field he has more than twenty inventions to his credit, and all are patented, four of the number being manufactured by the company of which he is president, and which has membership representation in the American-Surgical Trade Association. Mr. Lidberg is a man of splendid mental and physical vitality and finds his chief diversion in outdoor sports, including hunting and fishing. He has achieved large success within the period of his residence in Chicago and has the confidence and esteem of those with whom he has come in contact in both business and social circles.

The 15th of August, 1903, recorded the marriage of Mr. Lidberg to Miss Myrtle Camp, daughter of David D. Camp, of Stoughton, Wis. They have no children.

L. HANSEN DALL

Incidental and supplemental to the foregoing record concerning the Chicago Surgical and Electrical Company it is specially consonant that more definite reference be made to its treasurer, Mr. Dall, who is one of its large stockholders and whose effective administration of its fiscal affairs has had much to do with the growth and development of its business.

Mr. Dall was born in Denmark, on the 29th of March, 1888, and is a son of Niels and Bertha (Laursen) Dall. In his native land he received the advantages of the public schools, besides completing a course in a leading business college. After finishing his business course he became connected with mercantile concerns, until dissatisfied with their limited scope of opportunities and in 1910, when twenty-two years of age, he established his home in Chicago. Here he entered the employ of the Stearns & White Company, manufacturing chemists, and after several months' experience in the laboratory of this company's establishment he was tendered and accepted the position of bookkeeper and credit man, this advancement showing the high estimate which his employers placed upon his character and ability. He continued his alliance with this representative corporation until May 1, 1914, when he became one of the principal stockholders and the treasurer of the Chicago Surgical and Electrical Company, with which he has since continued his effective service in this executive capacity. A young man of vigor and pleasing personality, he has won a wide circle of friends among the representative business men of his adopted city, and here he has achieved advancement and definite success in connection with industrial and commercial enter-

prise of broad scope and importance, his status being that of one of the loyal and progressive young business men of Chicago.

On the 16th of October, 1911, was solemnized the marriage of Mr. Dall to Miss Marie Jensen, who was born and reared in the same town as was he himself and whose father was for many years harbor master of that place,—Aarhus, Denmark. Mr. and Mrs. Dall have two children,—Ellen and Erik,—and the family home is at 1314 Howard street.

WOODBRIDGE ORNAMENTAL IRON COMPANY

Another of the important industrial concerns of Chicago is that whose title initiates this paragraph, and the plant of the company is situated at 400 West Erie street. The Woodbridge Ornamental Iron Company is one of the comparatively new corporations of the city but it has all of the elements of stability and industrial success, with a factory equipped with the best of modern machinery and accessories and with management that is dominated by the vigor and progressiveness of men of the younger generation but of mature judgment and circumspection. This company is engaged in the manufacturing of the finest grade of ornamental iron products for buildings and other purposes, and the superiority of the output is a definite commercial asset. The products include ornamental iron window guards, elevator-car enclosures, store fronts, iron canopies, ornamental iron doors for varied purposes, bronze tablets, brass railings, decorative iron fences, etc. A special feature of the business that is now being developed is in the manufacturing of a spendidly devised and thoroughly tested fireproof stairway which was invented by Arthur L. Woodbridge, the president of the company, who received on the same United States patent in the spring of 1917. This is a most valuable and readily available invention and is destined to come into general use, with full justification for all claims made in its behalf.

Like many another important enterprise in Chicago that of the Woodbridge Ornamental Iron Company had a modest inception, but the business has shown a constantly cumulative tendency from the start and is now one of appreciable scope and importance, the reputation of the concern being such that it has been called upon to fill many large contracts throughout the entire Mississippi valley. The first important contract taken by the company was to manufacture and supply ornamental iron work and similar appurtances used in connection with the construction of a comparatively recent addition to the Evanston hospital, at Evanston, Illinois. Since that time an important contract has been filled in the supplying material of similar order for the American theater, the Parkway Hotel, and the ten-story, fireproof building recently erected by the Beatrice Creamery Company, this structure covering an entire city block in Chicago. Another important local contract was in supplying the finest type of ornamental-iron accessories for the Duplex-apartment building, one of the fine modern structures on the Lake Shore Drive. The company gives employment to an adequate corps of skilled artisans, and six or more men represent the outside interests of the business.

ARTHUR L. WOODBRIDGE

The president of the above mentioned company, which bears his name, was born in the city of Indianapolis, Indiana, on the 20th of January, 1882, a son of William Woodbridge. He acquired his early education in the public schools of Indiana's fair capital city, and at the age of twenty years, in 1902, he came to Chicago and found employment in the ornamental iron and wire works of the firm of Landon & Eggers. His position was that of estimator and one year after he had assumed the same the firm retired from business. Under these conditions Mr. Woodbridge secured a similar position with the M. H. Hickey Wire & Iron Company, with which he continued his connection two and one-half years. He then resigned his post to accept that of secretary of the Heath-Johnson Company, manufacturers and jobbers of brass goods. He became one of the interested principals in this business and after a period of six and one-half years he sold his interest and effected the organization of the Woodbridge Ornamental Iron Company, of which he has since continued the executive head, with secure vantage-ground as one of the representative business men of the younger generation in the western metropolis. Mr. Woodbridge is a republican in politics and is affiliated with both York and Scottish Rite bodies of the Masonic fraternity, as well as with the Mystic Shrine, was worshipful master of Cleveland Lodge No. 211 A. F. & A. M. in 1917 and is a member of the Hamilton Club and Mystic Athletic Club and Medinah Motor Club.

On the 24th of December, 1904, Mr. Woodbridge wedded Miss Maude Shepherd, of Indianapolis, Indiana, and they have two children,—Evalyn and Kathryn.

S. BIRKENSTEIN & SONS

This progressive firm controls a substantial wholesale business in the handling of waste metals and as dealers in metal smelters and refiners. The enterprise is one of the oldest established of the kind in Chicago and its large volume of business indicates the effective policies that have been brought to bear, the headquarters of the firm being at 409 West Ontario street. Sigmund Birkenstein, the founder of the business, was born at Kissingen, Germany, where he was reared to adult age and whence he emigrated to America in 1857. He first settled at Richmond, Virginia, where he was engaged in merchandising for several years. Upon coming to the north he established his residence at Mechanicsville, Iowa, where he was engaged in the clothing business for three years. From that place he removed to Hannibal, Missouri, where he continued to follow the same line of mercantile enterprise until after the close of the Civil war. In 1865 he made a visit to Chicago, and here he met and married Miss Mary Felsenthal, who was born in Odenbach, Bavaria, Germany. He returned with his bride to Hannibal, where he continued in business about one year thereafter. In 1866 he sold his business in Missouri and established his permanent home in Chicago. Here he began dealing in waste metal upon a small scale, and from this modest nucleus has been developed the substantial and prosperous business now controlled by the firm of S. Birkenstein & Sons. He continued his association with the enter-

prise until his death, in 1900, at the age of sixty-three years, and his venerable widow still maintains her home in Chicago. Sigmund Birkenstein was a man of sterling character and commanded unqualified respect in the city that was his home for more than thirty years. All of his eight children were born and reared in Chicago and his sons who are continuing the business which he founded are well upholding the prestige of the family name.

LOUIS BIRKENSTEIN

Louis Birkenstein, who is now senior member of the firm of S. Birkenstein & Sons, was born August 6, 1866, acquired his early education in the public schools of Chicago. In initiating his active association with business affairs he devoted a year to outside employment before identifying himself, at the age of sixteen years, with the business of his father. With characteristic discrimination and ambition he familiarized himself with all details of the enterprise, and his directing influence has been marked in the development and upbuilding of the large business now controlled by the firm, which deals in new and old metals, ingot copper, pig lead, spelter, block tin, scrap rubber, etc. In 1902 Mr. Birkenstein and his brothers Harry, Albert and Milton purchased the Globe Metal Company and engaged in the smelting and refining of metals, at 1970 Clyborne avenue. In this well equipped plant constant employment is given to fifty persons, and the brothers also own a large interest in the business of the Bryant Manufacturing Company, which employs twenty persons in the manufacturing of battery zincs, bells, etc. Louis Birkenstein is president of the Globe Metal Company and since 1914 has been president of the National Association of Waste Material Dealers. In the Masonic fraternity he has received the thirty-second degree of the Ancient Accepted Scottish Rite, besides being affiliated with the Mystic Shrine. He is a member of the Illinois Athletic Association and the Hampden Club, of which latter he served eight years as president and of which he is now a director. The firm of S. Birkenstein & Sons is represented in active membership in Illinois Manufacturers' Asociation, the Chicago Association of Commerce and other business organizations with similar civic functions.

In June, 1897, was solemnized the marriage of Louis Birkenstein to Miss Bertha G. Ulman, of Chicago. She was born in the city of Philadelphia, Pennsylvania, and her death occurred in April, 1915. She is survived by one son, George U.

ALBERT BIRKENSTEIN

Albert Birkenstein was born in Chicago on the 8th of November, 1879, was afforded the advantages of the public schools and the Chicago Business College, and like his brother he early became associated with the business founded by their honored father, his membership in the firm having been continued since 1903. He is identified with the same civic organizations as is his older brother,

having received the thirty-second degree in Scottish Rite Masonry, and is further affiliated with the Benevolent & Protective Order of Elks.

On the 25th of January, 1906, Albert Birkenstein wedded Miss Beatrice Schloss, who was born in the city of Milwaukee, Wisconsin, a daughter of Lee L. Schloss and Lena (Greenberger) Schloss, who were for many years well known citizens of Chicago. Mr. and Mrs. Birkenstein have two daughters, Ruth and Eleanor.

HARRY BIRKENSTEIN

Harry Birkenstein, who is now treasurer of the Globe Metal Company and secretary of the Bryant Manufacturing Company, was born in Chicago on the 11th of September, 1876, and he likewise gained early and effective experience in connection with his father's metal business. Like his brothers, he is identified with the Illinois Athletic Association and the Hampden Club. He married Miss Florence Weil, of Chicago, and they have one son, Harry, Jr.

MILTON BIRKENSTEIN

Milton Birkenstein, the youngest of the brothers, was born December 26, 1881, gained a public school education and became identified with the affairs of S. Birkenstein & Sons after the death of his father. Since 1899 he has been an active and resourceful factor in the control of the large business interests in which he is associated with his brothers, and he is vice-president of the Globe Metal Co. He holds membership in the Hampden Club and the Benevolent & Protective Order of Elks. He and his brothers are known as liberal, progressive and public spirited citizens, upright and enterprising business men and commanded the high esteem of all who know them.

On the 10th of June, 1908, was solemnized the marriage of Milton Birkenstein to Miss Lillian Behan, of Chicago, and they have two daughters, Marian and Bettie Louise.

PETER SCHOENHOFEN BREWING COMPANY

Continued success is the ultimate criterion of merit and reliability in the industrial and commercial world, and the distinctive priority maintained for fully half a century by the Peter Shoenhofen Brewing Company stands in evidence of its status as one of the leading concerns of the kind not alone in the city of Chicago but also in the entire United States. Its history has been one marked by steadfast policies of honor and progressiveness, and these policies have involved the output of products of the highest excellence, so that the splendid industrial enterprise of the present day rests upon the most secure of foundations, with a supporting patronage that denotes the high popular estimate that has always been placed upon the company and those concerned in its control. The extensive

plant of the company, at the intersection of Canalport avenue and Eighteenth street, stands as a veritable model of the best equipment for the exploitation of modern brewing enterprise, and here the business has been conducted for more than half a century. The original brewery was a small one, but it made its reputation for the superiority of its output, and that reputation the passing years have but enhanced. These years have recorded also the development of one of the largest and finest brewing plants in the Union, and it may well be understood that in this publication consistency demands the recognition of this representative Chicago concern.

It was in the year 1860 that Peter Schoenhofen, founder of the company which perpetuates his name, became associated with Matheus Gottfried in establishing a small brewery plant at the corner of Jefferson and West Twelfth streets, whence about one year later, removal was made to the site of the present great plant of the Peter Schoenhofen Brewing Company, which has exercised an important influence in the development and advancement of that section of Chicago. In 1867, by which time the plant had developed into one of the largest brewing and malting establishments in Chicago, Mr. Schoenhofen purchased his partner's interest and since that time the business has continued in the control of representatives of the Schoenhofen family.

In its early stages of development the annual output of the Schoenhofen brewery was about six hundred barrels of lager beer, and at the time of the founder's death, January 2, 1893, the total sales amounted to about one hundred and eighty thousand barrels per annum. At the present time this annual average has been increased to about seven hundred thousand barrels. The "Edelweiss" brand of beer has made the name of the Schoenhofen Company famous far outside of local limitations, and this brand has at all times stood sponsor for the utmost purity, for proper lagering and for the general superiority that makes appeal to the consumer. The great business has been built up on honor, and nothing has been permitted to infringe on the high reputation that was given to the industry by its sterling founder.

PETER SCHOENHOFEN

The founder of the company to which this article is devoted stood for nearly forty years as one of the loyal and broadminded citizens, representative business men and unostentatious philanthropists of Chicago. He was born in Derbach, in the Wittlich circuit of Rhensish Prussia, on the 2d of February, 1827, and there received his early educational discipline. After leaving school he was employed in a distillery until he was called upon to serve the prescribed term in the German army, his initial service having been in the fair old city of Cologne. He was twenty-four years of age when he completed his term of military service and within a short time thereafter he came to America. He first found employment in the cider-mill of a farmer near Poughkeepsie, New York, and concerning his course at that stage in his career the following pertinent statements have been written: "Shortly afterward Mr. Schoenhofen removed to Chicago,—a robust, energetic, practical young man of frugal and industrious habits, qualified and determined

to make a place for himself in the rugged western city of his adoption. In the town of Lyons, near the Des Plaines river, there was at the time a small brewery, operated by Mueller Brothers, and here the young man found his first employment in the vicinity of Chicago. About 1852 he went to work for M. Best, who owned a brewery on the lake shore in Chicago, near Sixteenth street. Conrad Seipp had just commenced a small business in Chicago, and soon Mr. Schoenhofen became the driver of the one beer wagon of the Seipp brewery. In 1860 he deserted his post long enough to marry Miss Elise Knepper, of Baden, Germany, and soon afterward he formed a partnership with Matheus Gottfried, their small plant having been located at the corner of Jefferson and West Twelfth street." Of the development from this point sufficient has already been said in this context.

Of the two sons and five daughters of Mr. Schoenhofen both sons preceded him in death, and four of the daughters survived him, one having become the wife of Joseph Theurer, who succeeded to the presidency of the brewing company, and another daughter having become the wife of Carl Buehl, vice-president of the company. Mrs. Schoenhofen survived her husband by several years. The following words of tribute well merit reproduction in this connection:

"Mr. Schoenhofen was of a retiring disposition, shunning the publicity of office-holding, although often importuned to enter the political field. He was one of the valued members of the Germania Bruderbund and one of the first members of the Germania male chorus. He gave freely but secretly, and at his death not only were his relatives abundantly provided for but many worthy charities were generously remembered. It is noteworthy that his bequests were made irrespective of racial or sectarian character, his obvious desire being to assist those institutions which he believed were doing a good work,—whether that work were conducted by Germans, American or Irishmen; by Catholics, Jews or Protestants."

JOSEPH THEURER

At this point is entered memoir to one who succeeded the founder in the office of president of the Peter Schoenhofen Brewing Company and who continued the incumbent of this position until his death, which occurred May 14, 1913. Mr. Theurer was born in the city of Philadelphia, Pennsylvania, May 24, 1852, a son of Christian Theurer, and after having received good educational advantages in his native city he came to Chicago in the autumn of 1869. Here he served a thorough apprenticeship under the direction of skilled brewers, Adam Baierle, K. G. Schmidt, and Louis A. Huck. He was also employed in the malt house of F. Wacker & Company and in 1871 he had worked less than one week in the brewery when the plant was destroyed in the historic Chicago fire of that year. Mr. Theurer passed the following year in Philadelphia and in the autumn of 1872 he returned to Chicago, where he was employed in the Bartholmae & Leicht Brewery until 1874. He passed the ensuing five years in Philadelphia and in 1880 he came again to Chicago, where in that year was solemnized his marriage to Miss Emma Schoenhofen, eldest daughter of the late Peter Schoenhofen. Mrs. Theurer survives her husband, as do also their two sons and two daughters, Marie

E. (Mrs. Richard Ostenrieder), Peter S.; Margaret E. (Mrs. Frank Birk) and Joseph G.

Associating himself with the Peter Schoenhofen Brewing Company in 1880, Mr. Theurer continued as its vice-president and superintendent until the death of Mr. Schoenhofen, in 1893, when he became president of the company. He continued as chief executive until his death, with the exception of one and a half years (from May 1911 to November 1912) when owing to ill health he spent his time in Europe and during which time Mr. Carl Ruhl became the firm's active head.

As a citizen Mr. Theurer was signally liberal and public-spirited, though he was essentially a business man and had no predilection for political activities or preferments. A strong and upright character denoted the man as he was in all of the relations of life, and he commanded the high regard of all who knew him. He was a prominent figure in the brewers' associations of Chicago and Milwaukee and likewise held membership in the Board of Trade of the city of Chicago.

PETER S. THEURER

In his effective stewardship as president of the Peter Schoenhofen Brewing Company it is but natural that Peter Schoenhofen Theurer should take pride in having succeeded to the exacting responsibilities and duties that had been dignified by the services of his honored father and his maternal grandfather. He is now standing in the shadow of ancestral greatness, however, but is dynamically proving his capacity as one of the resourceful and representative business men of the younger generation in his native city.

Mr. Theurer was born in Chicago on the 7th of November, 1882, and in preceding paragraphs has been given adequate record concerning his parents and lineage. After having received the best of educational advantages he loyally started in to develop his potentialities in connection with business affairs and to prove worthy of the trust that eventually was to devolve upon him. He placed no false estimates upon himself or family influence, but in 1900 began working in the great brewery of which he is now the executive head. He learned thoroughly the practical and technical details of the industry, finally was made assistant superintendent and later became assistant to the secretary of the company. In the autumn of 1908 he assumed the office of secretary and treasurer, and in October, 1913, shortly after the death of his honored father, he succeeded the latter in the presidency of the great institution that had been founded by his revered grandsire. Mr. Theurer, with characteristic energy and circumspection, gives his close supervision to the business of which he is the head and in connection with which a corps of about one thousand persons are employed.

Mr. Theurer is popular in the business and social circles of Chicago, is independent in politics, and holds membership in the Union League, the Chicago Athletic Association, the Chicago Automobile Club, the Chicago Gun Club and the Glen View Golf Club, besides which he is affiliated with the Benevolent & Protective Order of Elks.

In directing the policies and practical affairs of the Peter Schoenhofen Brew-

ing Company Mr. Theurer has the valued co-operation of Mr. G. A. Buhel, who is vice-president; Mr. C. Sippel, who is second vice-president and superintendent; C. J. Sheridan, who is secretary and treasurer of the company.

On the 16th of May, 1910, was solemnized the marriage of Mr. Theurer to Miss Ilma Carolyn Pfister, of Chicago, and the two children of this union are Ilma Jane, and John Peter. The family home is at 2350 Lincoln Park west.

GUSTAV LIDSEEN

The indomitable energy and progressiveness that so clearly sway industrial Chicago have been specially well exemplified in the career of Mr. Lidseen, who through his fine technical skill, initiative and executive ability has developed a well ordered and successful industrial enterprise in the manufacturing of dies, stamping tools, and special machinery, who is known also as an inventor of a number of practical mechanical devises and in whose well equipped establishment, at 224 North Desplaines street, are to be found the best of facilities for expert experimental work upon new inventions and the perfecting of the same, as well as for the effective handling of general lines of work in mechanical engineering. Mr. Lidseen established his present enterprise in 1905, in modest quarters at the corner of Fulton and Desplaines streets, and for the first year his business was purely of local order. At this location were utilized eight thousand square feet of floor space and Mr. Lidseen had the good judgment to equip his plant with the best of machinery and other appliances for the prosecution of the high-grade work to which he had set himself with characteristic vigor. Thus he had faculties for meeting the demands incidental to a largely diversified and intricate order of fine mechanical work, and he not only applied himself actively in practical work but also gave employment to eight skilled mechanics. In the earlier stages the enterprise was largely along the line of manufacturing typewriters, sealing machinery and calculating and electrical devices. In 1908 Mr. Lidseen removed to larger quarters, in the Bradley building on Desplaines street, where he remained four years and eventually required sixteen thousand square feet of floorspace, the corps of employes being increased to about fifteen mechanics. In 1912 possession was taken of the present finely equipped plant, in which are available twenty thousand square feet of floor space, and here the business has been increased to substantial volume, the while the reputation of the establishment has been advanced in marked degree, owing to the superiority of products and the high type of work turned out in all departments devoted to technical exploitation and construction. Mr. Lidseen is individually the inventor and patentee of eight mechanical devices of distinctive value, four of the number having been sold by him and his royalties from the same being of appreciable order.

Mr. Lidseen was born in the staunch old city of Gothenburg, Sweden, on the 23d of November, 1873, and there he received his early educational discipline. While yet a boy he entered upon a practical apprenticeship to the trade of machinist, and he was but sixteen years of age when he severed the ties that bound him to home and native land and bravely set forth alone to make for himself a place in America, where he felt assured of wider opportunities. With no

Peter D. Thurer

knowledge of the English language, the ambitious youth arrived in due time in the port of New York city, and thence he made his way to Centralia, Wisconsin, where he made his appearance with financial resources reduced to a few dollars. There he continued his apprenticeship, and in the meanwhile attended the public schools, in order to acquire working knowledge of the English language. After one year he went to Merrill, that state, where he obtained employment as a filer in a saw manufactory. There he remained one year, and in the meanwhile he devoted his otherwise leisure moments to study. With distinctly increased reinforcement of both mental and practical order, in 1891 Mr. Lidseen decided to expand his experience by going to Minneapolis, Minnesota, and there he secured employment as a machinist in the Twin City Iron Works. In 1893 he came to Chicago, and here his first work was as machinist in the shops of the Featherstone Manufacturing Company. At the first opportunity he took a course in one of the Chicago high schools, and his ambition was further shown by his completion of a course in mechanical engineering in a leading correspondence school, this institution having finally graduated him and given him the mark of special credit. In the second year of his residence in Chicago Mr. Lidseen found employment as a die and tool maker in the establishment of the W. D. Gibson Company, with which he remained four years. He next entered the employ of the Fort Dearborn Manufacturing Company, with which, on three different occasions, he served as foreman and superintendent of the plant.

In the year 1901 Mr. Lidseen accepted a position with the Mexican Central Railroad Company, and as an expert mechanical engineer he spent two years in Mexico, in the service of this company. He then resigned his position to accept that of tool designer for the El Paso & Northeastern Railroad Company, with headquarters at Alomogordo, New Mexico. He completed his assigned service with this company in six months, and the ensuing nine months were given to the completion of a similar expert work for the Southern Pacific Railroad. He then returned to Chicago to accept the position of general foreman for the Fort Dearborn Manufacturing Company, and later he became general superintendent for the Sandwich Electric Company, at Sandwich, Illinois. About one year later he accepted a position as expert mechanical engineer in the employ of the American Electric Fuse Company, of Adrian, Michigan, and there he passed nine months in the perfecting of certain inventions for the company. He then returned to Chicago and became assistant superintendent for what is now known as the Kellogg Switchboard Company. After retaining this position eighteen months he founded his present independent industrial and business enterprise, the success of which was virtually assured by the personal character, the technical ability and the broad and varied experience which he brought to bear. He has gained national reputation as an expert in the perfecting of inventions and in bringing into practical and concrete form the ideas of inventors. From blueprints and drawings he has thus evolved many valuable and intricate mechanisms that have become famous in industrial circles and that have added to the prestige of his individual business establishment.

Mr. Lidseen is affiliated with the Masonic fraternity and several clubs. October 15, 1901, recorded the marriage of Mr. Lidseen to Miss Hannah Ericson, and they have two children, Tilith, born in 1904, and Edward, born in 1910.

THE AMERICAN IRONING MACHINE COMPANY

This company has made important developments in iron machines and other laundry equipment, particularly suited to the needs of the home, as also equipment for the smaller laundries, hospitals, institutions, and hotels, and in this field the company occupies a leading position. Its product was awarded the highest award gold medal at the Panama-Pacific Exposition at San Francisco in 1915, also at the Panama-California Exposition at San Diego the same year, and in 1912 a silver medal awarded by the Illinois State Board of Agriculture gave due recognition of the superior merits of the product.

The company was started in a small way in 1905 with a capital of $5,000.00 by H. G. Grosse, Walter French, and Joseph W. Taft. H. G. Grosse was chosen president and assumed active management of the enterprise. The first machines were built in a small room rented in the Winslow Elevator and Machine Company's building. After a few months the shop was moved to a small loft in the Machinery Building, Randolph & Clinton streets, and the office to the Old Times Building, Washington street and Fifth avenue. These quarters were rapidly outgrown and the office was then moved to 26 E. Lake street and then to their present handsome quarters occupying the fifth floor of the Federal Life Building, the factory meanwhile having been moved to Algonquin, Illinois, operated by Peter Brothers and requiring the removal enlargement twelve times in the same number of years. The new two story shops located on the Chicago & Northwestern tracks, built last year, are already too small to handle this rapidly developing business.

The product has shown an equal expansion. At first the company confined itself to the manufacture of very small hand operated ironing machines, but today with the general use of electricity, even in the home, the ironing machine and other equipment is almost entirely manufactured for electrical operation.

H. G. GROSSE

H. G. Grosse, who with Walter French by a joint invention laid the foundation for the business, is still its active head and looks after the sales end of the business. The factory is managed by Mr. Edward Peter, the vice president of the company. The product of the company is nationally advertised and distributed and considerable export business done to the countries of Canada, England, Australia, and South America.

The company is particularly noted for its aggressive sales promotion methods. A book "The Salesman" of which Mr. Grosse is the author is being used extensively by the retail trade as a classic for the education of its store and field sales force. Other helps the company gives its dealers are store arrangements and display suggestions, window trim helps, follow-up plans, preparation of suitable direct-by-mail advertising matter, newspaper copy, street car signs, posters, etc., and for the trade that is not financially able to conduct a term business the company even carries the accounts. The company has such unbounded faith in its product and in the integrity of the average cus-

tomer that it sends its machines on 30 days' approval from Maine to California without requiring a dollar payment in advance. Rarely is a "Simplex" returned by reason of dissatisfaction or lost by reason of nonpayment, and the company is destined to be one of the very foremost in the country.

MADSON & IBSEN MANUFACTURING COMPANY

In the year 1885 Christian M. Madson instituted on a very modest scale the manufacturing of wood mouldings and general planing-mill work in Chicago, and his original factory was located at the corner of May street and Austin avenue. At the inception his capitalistic investment was but five hundred dollars, but he was admirably fortified in technical ability and indomitable energy, as the contnuous growth of his business fully demonstrated. In 1887 he found it necessary to secure larger quarters for the acommodation of his rapidly expanding business, and he accordingly rented additional space in the building in which he had established his new enterprise. Close application and the resultant efficiency of service brought cumulative growth to the business, while he gained the best of commercial assets, an established reputation for fair, honorable dealings. The continued success of his enterprise being now assured, Mr. Madson purchased, in 1891, vacant property at 1812 Austin avenue, and by the 1st of May of that year he had completed on this site the erection of a modern and well equipped milling plant, the building being three stories in height and affording an aggregate floor space of nearly thirty thousand square feet. He began business with a force of only three employes, but when operations were instituted in the new factory his corps of employes had been increased to thirty. The upper floors of the building were leased in an advantageous way and the manufacturing enterprise was conducted on the ground floor. In 1891 he admitted to partnership in the business a valued employe, Christian L. Ibsen, and at this time the business was incorporated under the Illinois laws and with a capital stock of twelve thousand dollars. Mr. Madson became president of the new corporation and Mr. Ibsen its secretary,—offices of which they have continued the respective incumbents to the present time, the title of the Madson & Ibsen Manufacturing Company having been adopted at the time of incorporation. Virtually all of the original building is now utilized by the company and in 1905 was erected an adjunct building, which likewise is three stories in height and which gives more than twenty-two thousand square feet of floor space, the number of employes in 1917 being about fifty. From a small local business the enterprise of this progressive company has been developed to one of broad and important order, the trade of the concern now extending throughout the territory normally tributary to Chicago in a more immediate way. Mr. Madson has continuously been the able and energetic executive head of the business which he founded in such a modest way and the upbuilding of which stands in distinct evidence of his ability and his close observance of the best commercial ethics. His insistent policy has at all times been that of giving value received to his patrons, and his success has been won entirely by his own efforts, as he came to Chicago as a young man untrained in American customs and business methods

and without financial resources of more than nominal order. Prior to coming to America he had never been more than a few miles from the small Danish town in which he was born and reared, and the record of his career in the United States offers both lesson and incentive. In the following paragraphs are given more specific personal data concerning him.

CHRISTIAN M. MADSON

Christian M. Madson, president of the company described in the foregoing paragraphs, was born on the rugged and rockbound Danish island of Bornholm, in the Baltic sea, and the date of his nativity was May 26, 1853. In his native place his definite educational training was limited to attending school during three winter seasons, and his broader education has been that gained under the direction of that most versatile of head-masters, experience. In 1872, at the age of nineteen years, he severed the home ties and emigrated to the United States, strong in courage and self-reliance and determined to make for himself a place of independence in the land of his adoption. Soon after his arrival in the port of New York city he made his way to Chicago, and for the ensuing two years he worked at common labor. He then, in 1874, found employment in the planing mills of the S. I. Russell Company, at the corner of Fulton and Desplaines streets, and with characteristic ambition he applied himself diligently and missed no opportunity of enlarging his technical knowledge and experience. He learned the business in its every detail and in the latter part of his eight years' association with Russell Company he held the position of factory foreman. He resigned his position at the expiration of the eight years, to accept that of manager of the planing mill and factory of Trunk Company, and he continued as superintendent with this firm until 1885, when he engaged in the same line of business in an independent way, his career since that time being duly outlined in the foregoing article. Mr. Madson has not only achieved worthy success in America but has also become imbued with the deepest loyalty to and appreciation of the United States, zealous in his support of those agencies that conserve good government and general progress and unwavering in his allegiance to the republican party. In a fraternal way he marks his continued affection for his native land by maintaining affiliation with the local organization of the Danish Brotherhood.

In 1884 was solemnized the marriage of Mr. Madson to Miss Mary Ibsen, who likewise was born in Denmark, and who is a daughter of Hans Ibsen, her brother Christian being secretary of the Madson & Ibsen Manufacturing Company, as noted in the preceding article. Mr. and Mrs. Madson have two children,—Walter E. and Alice B. Madson.

Walter E. Madson was born and reared in Chicago and since leaving school he has been closely associated with his father's business, in which he received a thorough training under the punctilious and earnest direction of his honored sire. He is a valued factor in connection with the business and is one of the progressive young business men of his native city. He is a Republican in politics

and is affiliated with the Masonic fraternity. He married Miss Lily Zimmerman, of Chicago, and both are popular in the social circles in which they move.

F. H. SMITH MANUFACTURING COMPANY

This company was organized and incorporated in the year 1892 under the name of the Chicago Manufacturing and Optical Company. The business of this well ordered corporation was founded in the autumn of 1892 and at the time of the incorporation of the company its capital stock was placed at five thousand dollars, operations at the present time being based on a capital stock of twenty-five thousand dollars. The original factory of very modest order, was established in the building at Madison street, and later removal was made to larger quarters at 18 West Randolph street. The business was conducted without formal organization and incorporation until May 17, 1901, when incorporation was effected under the provision of the laws of Illinois for $25,000 under the name of F. H. Smith Manufacturing Company. F. H. Smith, the founder of the business, was elected president of the company (and F. A. Hardy remained as one of the officers until 1903, when David C. Sasseman was elected vice-president. The enterprise originally was confined largely to the handling of a jobbing trade in optical instruments and accessories, but with the passing year the manufacturing of optical and other scientific instruments and apparatus became the major function. Since October 1, 1914, the factory of the company has been established in its present location, and its facilities throughout are of the most approved and modern order, the trade of the company extending into the most diverse parts of the United States, and also into Australia, New Zealand, Mexico and South American countries. David C. Sasseman is president and treasurer of the company and E. F. Smith holds the office of secretary. The company controls many valuable patents on machines manufactured by them and is represented in membership in the Illinois Manufacturers' Association and the National Metal Trades Association.

An important and representative industrial enterprise has been developed by this corporation, in the manufacturing of harness and shoe machinery and hardware specialties and fire-department equipment, including Armstrong's patented collars and hames and Kennedy automatic holders and hangers. In a more specific sense, detailed description of products being outside the assigned province of this publication, it may be noted that the high-grade specialties manufactured by the F. H. Smith Manufacturing Company include riveters; spot setting machines and spots; hook, stud and eyelet setting machines; snap-fastener machines; grommet setting machines; leather-punching machines; window cleaners; and, in the department devoted to fire-department equipment, the company controls the patents and is sole manufacturer of the Armstrong improved, adjustable collar and hames and the Kennedy automatic harness holders and hangers, the Armstrong improved harness trip for rope hangers; the Larsen improved patent breast collar lock, line and pole snaps, bits, bridle, police and ambulance harness, quick-switching harness, etc. The superiority and general efficiency of the fire-department equipments manufactured by the company

is best attested by the fact that these products are used by some of the largest and most important municipal fire departments, including that of Chicago. The trade of this company extends into all parts of the United States and Canada, and a substantial export business has been developed in South American countries, Denmark, New South Wales and other foreign countries. David C. Sasseman is president of the company and gives his close attention to directing the executive affairs of the corporation, the large and modern manufacturing plant of the concern being at 3037-47 Carroll avenue.

Fred H. Smith, the honored founder of this representative enterprise, gained secure place as one of the able and progressive captains of industry in Chicago and was in the very prime of his strong and useful manhood when he was called from the stage of life's mortal endeavors, his death having occurred in 1908, when he was fifty years of age. Mr. Smith was born in the vicinity of Boston, Massachusetts, in the year 1858, and after having duly fortified himself in youthful educational discipline he entered upon an apprenticeship to the trade of machinist. He became an expert mechanic and made advancement until he was the incumbent of a responsible position in one of the extensive watch-manufacturing establishments in the east. In 1892 Mr. Smith came to Chicago, and here he founded in a modest way the enterprise that has since been developed into the large and important manufacturing industry still conducted under the corporate title of the F. H. Smith Manufacturing Company. Mr. Smith was a man of sterling character and admirable constructive and executive ability, his energy and progressiveness having been potent in laying a firm foundation for the business of which he continued the executive head until his death. He was the founder also of the Chicago Manufacturing & Optical Company, of which he became secretary and treasurer, specific mention of this company being made on other pages of this work.

Upon the death of Mr. Smith David C. Sasseman, likewise an expert mechanic, became president of the F. H. Smith Manufacturing Company, with which he had become associated in the year 1901 and of which he had become a stockholder, his service as vice-president of the company having continued from 1903 until he became Mr. Smith's successor in the office of president, in 1908. At the time when Mr. Sasseman assumed the chief executive office the annual business of the company had an average approximate of one hundred thousand dollars, and under his efficient regime advancement has been made until the business for the year 1917 was appreciably in excess of two hundred thousand dollars. The modern plant erected and owned by the company, at 3037-47 Carroll avenue, is one of the handsome industrial buildings of Chicago, the same being five stories in height and of most pleasing architectural design. The building is of modern brick and stone construction and is a model in its arrangement and equipment for the uses to which it is applied. The F. H. Smith Manufacturing Company occupies the basement and first and second floors of this building and utilizes an aggregate floor area of one hundred and fifty thousand square feet, the normal force of employes being one hundred persons, the most of which are highly skilled artisans. Mr. Smith, the founder of the business, was the inventor and patentee of several valuable machines used by manufacturers of harness, shoes and other leather products. To his genius in this line are due the highly improved machines manufactured by the company which bears his

name and to the development of which he gave the best of his splendid powers and energies.

David C. Sasseman, president of the F. H. Smith Manufacturing Company, was born in the attractive little rural village of Constantine, St. Joseph county, Michigan, and is a son of the late Solomon Sasseman. In the public schools of his native town Mr. Sasseman received his early educational discipline, and in later years he depended upon his own resources in effectively supplementing this preliminary training by taking several special courses of study in the Lewis Institute, one of the foremost technical schools of Chicago. At the age of seventeen Mr. Sasseman entered upon an apprenticeship to the trade of machinist in a large manufacturing plant in a near by city. After several years of service in this plant Mr. Sasseman decided to amplify his technical and general experience by indulging measurably in the wanderlust. The first position of importance was in a large contract and engineering building plant, which position he held for over a year. Severing his connection with this company, he secured and held several positions of importance with some of the best manufacturing concerns in the east covering a period of several years. Finally Mr. Sasseman became convinced that Chicago offered better opportunities to a young man of ambition, and accordingly in 1891 he came to Chicago and here readily found employment with some of the largest and best known manufacturing plants, and filled various positions of trust until 1901, when he accepted a position with the F. H. Smith Manufacturing Company, for the prime purpose of perfecting for the concern an automatic screw machine department. So successful was his work in this connection that he was finally made superintendent of the entire plant and became a stockholder of the company. In 1903 he was elected vice-president of the company, and he continued in tenure of this office until 1908, when, as before noted, he succeeded to the presidency of the corporation, upon the death of its founder, Fred H. Smith. Mr. Sasseman has perfected numerous inventions of distinct practical value and has received patents on the same. He has been actively concerned in the establishment of a number of other manufacturing enterprises in Chicago and is a popular and valued member of the Illinois Manufacturers' Association.

As a loyal and progressive citizen Mr. Sasseman takes lively interest in civic affairs and is a staunch supporter of the cause of the Republican party. He has completed the circle of both York and Scottish Rite Masonry, in the former of which his maximum affiliation is with Siloam Commandry of Knights Templars and in the latter of which he has received the thirty-second degree, as an affiliate of Oriental Consistory, besides which he is identified also with the correlated organization, the Mystic Shrine.

The year 1894 recorded the marriage of Mr. Sasseman to Miss Lillian St. Peter, of Chicago, and they have two children,—Robert and Grace.

VICTOR MANUFACTURING & GASKET COMPANY

In the control and direction of industrial enterprises of broad scope and large volume no country in the world has offered to young men of initiative power and

worthy ambition so splendid opportunities as has our American republic, and in no city has the young man come to his own, perhaps, in so distinct and influential a way as in Chicago. Here encouragement and support are never denied to any legitimate business undertaking, and here it has been possible for young men of ability and spirit to develop from modest inceptions industrial and commercial enterprises of important order. This has been significantly true in connection with the corporation named above, and within the course of a few years this concern has gained precedence as the world's largest manufacturers of copper asbestos filled gaskets. The well equipped and modern manufacturing plant of the company is situated at the corner of Troy and Twenty-first streets and the "Victor" trademark has become a synonym of superiority and maximum excellence in the manufacturing of gaskets, which is made the exclusive base of the enterprise. From the foreword of one of the fine catalogues recently issued by the company may consonantly be taken the following pertinent quotations:

" 'Victor,' the name that has been associated with the manufacture of gaskets for the automobile industry for many years, enjoys a reputation which is the result of high ideals rigidly maintained and an excellence of service and product that has created an unprecedented insistence for Victor Copper Asbestos Gaskets. The efforts of this entire organization are devoted to the manufacture of gaskets and directed by men of wide experience, long identified in this line and with unquestioned ability to produce work of the highest quality and accuracy. Our modern, fireproof plant is scientifically laid out for economy of production and is equipped with special gasket-making machinery. The Victor Copper Asbestos Gasket for detachable-head motors and all other services as at present manufactured, is the result of long years of experience, together with the most careful and painstaking effort, and it is becoming universally adopted by manufacturers as a part of their regular equipment. Nothing can more strikingly emphasize our claims for superior efficiency."

The Victor Manufacturing & Gasket Company dates its inception from October 9, 1909, and its organization was effected by John H. Victor, who has been its executive head from the beginning. The capital at the time of incorporation was but twenty-five hundred dollars, and the first "factory" was in the basement of a three-story flat building at 2318 Marshall boulevard. In starting the new concern John H. Victor had as his associates and coadjutors his two younger brothers, Joseph B. and Paul F., the former of whom is now vice-president and the latter secretary of the company. At the basement headquarters employment was given to a force of about ten operatives and there the business was continued one year. Removal was then made to 3000 West Twentieth street, where the company took possession of an old store building. Increasing business tested the capacity of the new establishment and made imperative the securing of larger quarters. It was at this juncture, in 1911, that the company effected the purchase of the site of the present plant, on which was forthwith erected a modern brick building three stories in height and seventy-five by one hundred and twenty-five feet in lateral dimensions. This building sufficed until 1915, when an additional frontage of seventy-five feet of ground was purchased and a strictly modern, fireproof building of three stories was erected, a portion of the same extending over and supplementing the original factory.

With the substantial growth of the business the capital stock of the company

Old Plant

General Offices and Factory

VICTOR MANUFACTURING & GASKET CO.

was gradually increased,—first from twenty-five hundred to twenty-five thousand dollars; next to fifty thousand dollars; and finally to one hundred thousand dollars. Though the capital stock is maintained at the figure last noted, the assets of the company have been conservatively estimated at a valuation of nearly one million dollars. This is a close corporation and thus it has been deemed not expedient or advisable to increase the capital stock further. John H. Victor, president of the company, holds three-fifths of stock and thereby controlling interest in the corporation. Balance of stock is held by Joseph B., Paul F., Anton S. and Benjamin Victor. The corporation now gives employment to a force varying from four hundred to five hundred persons, and the annual output of the plant averages from one million to one million and a half dollars. The trade is almost entirely domestic, no special effort having been made to increase the very appreciable foreign business. The high-grade gaskets manufactured by the Victor Company are utilized by the largest and most important automobile factories in the world, and this company thus supplies in addition to practically the entire automobile industry manufacturers of spark plugs and carburetors; and many railroads, tractor manufactures; manufacturers of agricultural machinery; manufacturers of marine and gasoline engines and motors; as well as the yards maintained by the United States government for the manufacturing of equipment for the army and navy; and many other industrial corporations and firms that require gasket provisions of the best order in fortifying working parts of machinery in such a way as to minimize the loss of power and wastage. The Victor trade mark, of artistic design, is uniformly recognized as representing the acme of perfection in copper asbestos gaskets, and, as previously noted, the company confines itself exclusively to the manufacturing of gaskets of all types demanded in the fortifying of machinery and mechanical devices of varied descriptions. Of the manifold types of gaskets manufactured by the company adequate description is given in the fine trade catalogues issued, and it is not the province of the publication at hand to usurp in any sense the functions of such effective vehicles of information issued directly by any of the many important concerns represented in its pages.

The Victor Manufacturing & Gasket Company have under way definite plans for doubling the capacity of the plant, by further extension of the fire-proof building, but owing to disrupted industrial conditions incidental to the great world conflict in which the United States has become involved the carrying forward of the contemplated improvements is temporarily held in abeyance. In the context that immediately follows is given specific mention of the executive officers and controlling factors of the company.

JOHN H. VICTOR

The difference between the generations of any country with a history is commonly not one of principle but of emphasis. Our American republic owes its magnificent upbuilding to the fact that it has developed men of distinct initiative ability, and as one generation has followed another there has been room for such men in every progressive business. Chicago has every reason to take pride in the

achievement of her native sons who to-day are prominent and influential figures in her industrial and commercial life, and the foregoing article indicates in a measure the virile and dominating activities of John H. Victor in the upbuilding of a strong and well ordered industrial business. He stands as a true type of the aggressive energy that the native sons of Chicago have revealed in significant degree, and his advancement has been the result of his own ability and well ordered endeavors. He is president of the Victor Manufacturing & Gasket Company, as has been already noted, and he was born in Chicago on the 9th of October, 1882. He was afforded the advantages of the public schools and in his practical experience as a youth he held as satisfactory and consistent naught save consecutive advancement, inertia and apathy being foreign to his nature in every respect. Prior to entering upon his independent business career, as shown in the foregoing article, he had held responsible positions as foreman and superintendent for important local industrial concerns, and it bespeaks much for his initiative and energy when it is stated that under his administration has been developed the largest manufactory of gaskets to be found in the world. He gives close and loyal attention to the splendid enterprise of which he is the executive head but, buoyant, generous and popular, he finds time to get the most out of the finer social amenities of life and out of the recreation and diversion which he finds as an enthusiast in motoring and baseball. Among the employes of the Victor factory is maintained a strong baseball team, and Mr. Victor takes a lively personal interest in the same and in the other sports in which he mingles freely with his employes, in the closest of friendly and reciprocally appreciative relations. In short he is a young man who takes a clear and normal view of the true values in life and makes every day count for good. He not only has the esteem and confidence of his employes, who invariably give to him the most loyal co-operation, but he has with equal firmness entrenched himself in the confidence of the directing officials of some of the leading banking institutions of Chicago's great "Loop" district, with the result his credit is almost unlimited. He owns and occupies a beautiful home at 5946 Washington boulevard, corner Mason avenue, and this property is valued at fifty thousand dollars. Appreciating the best in business and social life he avails himself of the privileges of both, and in each of these spheres his circle of friends is coincident with that of his acquaintances. His extended travel throughout the country in the interest of his business has given him an acquaintance from coast to coast, and like the goods he manufactures, is cordially received wherever he goes. His are the intrinsic elements from which true success is evolved, and his achievement, large as it has already been, but augurs greater things for the future. Mr. Victor was married in 1908. Two children, Irene and John H., Jr.

JOSEPH B. VICTOR

The vice-president of the Victor Manufacturing & Gasket Company was born in Chicago on the 4th of January, 1887, and he and his two brothers have worked side by side in the upbuilding of the substantial business controlled by the company in which they are the principals. Mr. Victor is indebted to the Chicago public schools for his early educational discipline and his subsequent experience

John T. Pickton

prior to becoming associated with his brothers in the founding of the company of which he is vice-president had involved practical experience in connection with manufacturing enterprise, with incidental preferment as foreman and shop manager. He is responsible for the introduction of the manufacturing of the line of high-grade gaskets that have been the basis on which the fine business of his company has been evolved, and he maintains a general supervision of the manufacturing, besides assisting the president of the company in the formulating of executive policies and methods. He owns and occupies a pleasant residence at 1663 Troy street.

PAUL F. VICTOR

The secretary and treasurer of the Victor Manufacturing & Gasket Company is the third member of the resourceful fraternal triumvirate that has compassed the development of the extensive and prosperous enterprise of this corporation, and in his official capacity he has direct charge of the fiscal and general office affairs of the company, with the exception of the correspondence. He was born in Chicago on the 25th of January, 1885, and after leaving school he, like his brothers, won advancement in connection with local business concerns, his services having included that of shop foreman and general office work of a secretarial order. Finally, as shown in a preceding article, he became associated with his two brothers, John H. and Joseph B., in founding the Victor Manufacturing & Gasket Company, and they have worked together in the utmost harmony in the upbuilding of the business of this representative concern. Under the guidance of John H. Victor, who has held himself in large measure responsible for his younger brothers, there are yet two younger brothers, Anton S. and Benjamin, who under his fraternal and discriminating guidance are rapidly making their way to the front, who are also interested in the business of the Victor Manufacturing & Gasket Company and hold responsible positions. Anton S. already resides in his own residence in Oak Park, while Benjamin and their only sister Emily make their home with John H. Victor.

ADJUSTABLE CLAMP COMPANY

Manifold and wonderfully diversified are the enterprises that go to make up the sum total of the great industrial activities centered in Chicago, and each concern continues its quota to the city's prestige. This element of contribution on the part of the Adjustable Clamp Company has been strong and assured, and special interest attaches to the company by reason of the fact that its executive head, Mrs. Adele V. Holman, has proved fully the resourcefulness and administrative ability which woman may bring to bear in the broad domain of industrial and commercial enterprise. Mrs. Holman is president of the company and virtually the sole owner of the business which is being most ably and progressively conducted under her personal administration.

The well equipped manufacturing plant of the Adjustable Clamp Company

is established at 216 North Jefferson street, and here the company gives special attention to the manufacturing of the "Jorgensen" Adjustable Hand Clamps, as well as the Non-Adjustable Hand Clamps, that likewise bear the name of "Jorgensen." The output of the factory includes also tempered spring-steel bar clamps and malleable clamp fixtures. This Company is incorporated under the laws of Illinois, and its first officers were Marcus W. Russ, president and treasurer, and Walter Caddock, secretary. Hans Jorgensen, the inventor and patentee of the "Jorgensen" clamp, was without sufficient capital to exploit properly his invention, and under these conditions he prevailed upon Marcus W. Russ, a successful member of the Chicago bar, to invest a small amount of money and assume an interest in the incipient manufacturing enterprise. Under these conditions was effected the organization of the Adjustable Clamp Company and operations were initiated on a most modest scale, a small room being secured as the original headquarters and here being turned out the first of the Jorgensen patent devices for commercial introduction. The business though lacking somewhat in systematic management, began to expand in scope, simply by reason of the indisputable superiority of the device manufactured, Mr. Russ giving his entire attention to the business until October, 1914, when he retired to engage in another line of business. With the growth of the enterprise there came necessity for larger quarters, and accordingly removal was made to a building on Milwaukee avenue where operations were continued until 1905, when commercial expediency caused the removal to more eligible headquarters now maintained, at 216 North Jefferson street. Here requisition was made for an entire floor, affording twenty-five hundred square feet of space, and here the force of employees was increased to six. The "Jorgensen" patent clamps gradually gained recognition and demand outside of the immediate local field, and the same are now in use in all parts of the United States, the "Jorgensen" clamps having been adopted in the pattern shops of the United States government, and by the navy department, as well as in leading manual training schools, aeroplane and automobile factories and other important manufacturing establishments, the company now having a substantial trade in the United States and Canada and having developed also a prosperous export business, with a well established trade in England, Australia, China and South Africa.

In 1917 it became necessary to increase the factory accommodations, and requisition was made for another floor of the same building, so that the floor space now utilized is five thousand square feet, the while the force of employees has been increased to fourteen persons, the majority of whom are skilled mechanics. The annual output of the clamps manufactured by the company is approximately eight thousand dozens. In 1914 the company began the manufacturing of the Jorgensen Non-Adjustable Clamps, and this department of the enterprise has become one of the most important, a large trade having been developed and orders for the products coming from all parts of the civilized world. The company has become sales agents for the tempered spring-steel bar clamps and malleable clamp fixtures of superior order, and in the handling of the same material addition has been made to the success of the general commercial business of the concern. The company issues descriptive literature giving full information concerning the products, but it may be stated at this junction that the "Jorgensen" patent clamps, for the use of woodworkers, completely

eclipse in every particular all similar devices. The "Jorgensen" clamp is nearly twice as fast in operation as any other clamp made, its spindles being equipped with a right and left hand thread; its jaws can be adjusted to any angle, this doing away with the squaring up of irregular surfaces, which every other clamp requires, one jaw can be made to overlap the other, an advantage that can be claimed for no other clamp; the clamp has a tighter grip with less power than any other device of the kind; glue will not adhere to the spindle; parts are not liable to become separated, and the clamps are guaranteed against breakage. The spindles and sockets of the "Jorgensen" clamps are made of the best steel and its jaws of seasoned maple, the adjustable features making the clamp a specially valuable tool and one that has gained unqualified approval. Apropos of the reception given to the "Jorgensen" Clamps, the following estimate has been given: "The 'Jorgensen' Clamp in a comparative few years, has practically driven all other makes from the market and has become the standard tool of its kind in this country and foreign lands. The government boards of education all over this country and every industrial institution that knows it have adopted it. No other tool has enjoyed so instant and so universal favor."

In 1907 Mrs. Adele V. Holman purchased stock in the Adjustable Clamp Company and succeeded Walter Caddock in the office of secretary. The company at that time maintained its business office in the law office of Mr. Russ, president of the company. At that period the weekly output of the factory rarely exceeded twenty-five dozen clamps and the enterprise went forward under the efficient salesmanship of Marcus W. Russ, who traveled demonstrating these clamps to the government and public institutions all over the country, until he had established a great demand for these goods. All government orders are now specified for this make of clamp on their requisitions. Shortly after Mrs. Holman became secretary of the company she decided that to insure the maximum success of the enterprise the business office should not be longer seggregated from the factory. She accordingly set definitely to work to bring about an orderly and progressive administration of affairs, though she had virtually no previous business experience. She established her executive headquarters at the factory and by her careful and discriminating methods evolved order out of chaotic conditions. In 1914 she purchased the entire interest of Mr. Russ, president of the company, and she has since continued as the sole owner of the business, with technical distinction as president of the company. For four years prior to assuming control she practically had the entire office management of the business and under her regime the concern became a substantial, well ordered and growing institution, her policy having been fully justified in tangible results. She is essentially one of the representative women in the industrial activities of Chicago and has achieved success of unequivocal order.

MRS. ADELE V. HOLMAN

Mrs. Adele V. Holman, president of the company described in the preceding context, was born at Jerseyville, Illinois, and is a daughter of John E. and Anna (Remer) Van Pelt, who established their home in Chicago shortly after the

great fire of 1871. Mrs. Holman received the advantages of the public schools of Chicago and was but fifteen years of age at the time of her marriage to Harry W. Holman, an official in the claim department of the Chicago & Eastern Illinois Railroad, his death having occurred in 1905. The one child of their union Harry V., is purchasing agent for the Portland Gold Mining Company, of Colorado Springs, Colorado, where he maintains his home.

Mrs. Holman is gifted with a splendid Mezzo Soprano voice and has developed most efficiently her musical talent. At the age of eighteen years she held the position of soloist in the First Methodist Episcopal Church of Englewood, and later she held similar preferment for a term of years in the Englewood Presbyterian church. In the early years of her career she joined the distinguished violinist, Ovad Musan, in an extended concert tour that involved her appearance as soloist in leading auditoriums in the largest cities of the Union and that gained to her wide and enviable reputation as a musician of remarkable talent and most gracious personality. After completing the year's tour with Musan Mrs. Holman organized the Arion Ladies' Quartet, which under her efficient management gained a national reputation. In 1907 Mrs. Holman made possible the development of her versatile talent by identifying herself with business affairs in an active way, this year having marked her purchase of an interest in the business of which she is now sole owner, as president of the Adjustable Clamp Company. When she initiated her service with this company it purchased its lumber by the wagon load and other raw material on the same scale. Under her administration the business has been so pushed to the front that it is now necessary to purchase lumber by the carload lot, and she rigidly maintains the policy of paying spot cash for this and other supplies. Mrs. Holman made an investment of eighteen thousand dollars when she purchased the interest of Mr. Russ in the business which she now controls.

N. A. STRAND & COMPANY

In catalogue No. 10 issued by the above named firm appear the following significant statements bearing upon the special functions of the substantial industrial enterprise conducted under the title noted: "The application of power in the present age is almost unlimited, due to the fact that the problem of power transmission has been solved by some of the best minds of the century, who by discoveries and inventions have furnished the means,—not the least of which is the Strand Flexible Shaft. In our own factory we make all of the shafts listed in this catalogue, by a special method that is the result of fifteen years experience. The Strand system is the most flexible on the market and the device, in its varied sizes and lengths, has been proved indispensable as a time and money saver."

Among the innumerable kinds of mechanical work to which the Strand flexible shafts are applied in a most practical and effective way may be noted the following: External and internal grinding of dies in lathe and shaper, trueing lathe centers and grinding flat gauges in shaper; sharpening punches in press without disturbing setting; grinding heavy castings, fins on gears and pulleys; cleaning castings with wire scratch brush; waxing furniture for stencil work,

sanding the arms of chairs and removing paint; drilling in metal and boring in wood. All shafts are equipped with an improved metal casing that does away with the shaft trouble common to other flexible shafts and that will outwear any other casing now on the market. The Strand shaft is so constructed as to be freely flexible to a certain radius, and when this radius limit is reached the devices automatically form a stop, thus preventing accidental short bends. The firm manufactures special flexible shaft machines to meet individual requirements, and is prepared also to make up any special fittings desired. The output of the factory includes also tool-post grinder spindles, the most approved types of grinders for both heavy and light grinding and polishing, full tool-post and countershaft equipment, high-speed blowers and other special types of machinery. The plant of N. A. Strand & Company is finely established in a modern industrial building at 625 Jackson boulevard, and in appending sketches concerning the principals in the firm appear further pertinent data relative to the factory and the business. This substantial and thriving industrial enterprise was found in 1905, and represents a copartnership between two brothers, Nels A. and Oscar V. Strand, whose technical ability and progressive policies have been potent in the development of one of the really successful and noteworthy manufacturing enterprises of the western metropolis.

NELS A. STRAND

The founder of the business described in the foregoing paragraph, was born at Grenna, Sweden, on the 6th of February, 1877, a son of Johann and Aqilina (Gilburg) Strand, both now deceased. The father was a prosperous wood and metal manufacturer in Sweden, though he conducted business on a comparatively small scale, in an agricultural community in his native land, where both he and his wife maintained their home until their death.

Nels A. Strand is indebted to the schools of his native land for his early educational discipline and there he learned the machinist's trade in his father's factory. In 1895 he came to the United States, locating in Chicago and his capitalistic resources at the time were summed up in less than one dollar. For the first year he was employed in the mower department of the great factory of the McCormick Harvester Company, and for the next three years he was employed in the pattern and model department of the Deering Harvester Company. His ambition and resourcefulness worked for consecutive advancement and broadening experience, and thus he was found for five years engaged as a skilled mechanic in the establishment of F. S. Betz & Company, manufacturers of surgical appliances. He was made manager of the machinery department, and in the meanwhile he saved his earnings and formulated definite plans for an independent career. In 1905, on a very modest scale, he began the manufacturing of a patented electric vibrator. He was the patentee of this device and initiated its manufacture in limited quarters at 72 West Lake street. In 1907 removal was made to more eligible quarters, at 314 South Canal street, where twelve hundred square feet of floor space were utilized, these accommodations being three times as large as the former quarters. At this juncture Mr. Strand supplemented his

own active labors by the retaining of eight employes. With the continued growth of the business it was finally found necessary to remove to the present quarters, at 617-631 Jackson boulevard, where six thousand square feet of floor space are demanded for the accommodation of the manufactory and offices and where more than twenty skilled artisans are given employment. Since 1912 the firm has given exclusive attention to the manufacturing of the Strand flexible shafts and allied mechanical appliances, as designated in the preceding article. In 1912 Mr. Strand admitted to partnership in the business his older brother, Oscar V. In the commercial disposition of its products the firm retains authorized and sole selling agents,—one for the trade in the United States and another for that in Canada and Europe. The Strand flexible shafts now have an assured international reputation and use, by reason of recognized superiority, and the Canadian and European trade of the concern is constantly expanding, as is also that in the United States, the Canadian representative maintaining his offices in the city of Toronto, the home agency being in Chicago.

April 9, 1904, recorded the marriage of Mr. Strand to Miss Anna Wall, who likewise is a native of Sweden, and they have three children,—Grace, Hazel and Herbert.

OSCAR V. STRAND

The elder of the two brothers constituting the firm of N. A. Strand & Company, was born at Grenna, Sweden, on the 2d of April, 1873. Like his brother Nels A., he acquired his early education in his native town and served also a thorough apprenticeship to the machinist's trade, in the establishment long conducted by his honored father. In 1891 he came to America and first went to his uncle's farm, near Fowler, Indiana. Upon coming to Chicago he found employment in the pattern department of the Deering Harvester Company, where he remained several years. Thereafter he was in charge of the tool room of the factory of the Chicago Flexible Shaft Company until he became associated with his brother in forming the present progressive firm of N. A. Strand & Company. Both of the brothers came to the United States as ambitious young men dependent upon their own resources for advancement, and their achievement attests alike to their energy, self-reliance and initiative ability, as well as to their sterling attributes of character.

In the year 1901 was solemnized the marriage of Oscar V. Strand to Miss Ida Johnson, of Chicago, and they have four children,—Florence, Esther, Ethel and Myrtle.

GUSTAF F. STRAND & COMPANY

Under the above title is conducted a very substantial and successful business in the making of patterns and models of the higher mechanical order, and the enterprise was established in 1909, with headquarters at 310 South Des Plaines street. Gustaf F. Strand, a skilled artisan and ambitious business man, initiated the enterprise in an individual way, and his original "corps" of

employes numbered one boy. He utilized at the beginning fourteen hundred square feet of floor space, and even this was far in excess of demands, as he had not a single order on file when he initiated business. His first order was for a ring pattern to be used in the manufacturing of piston rings for gas engines, and the order was given by the firm of Nelson & LeMoon, manufacturers of automobile trucks. For this pattern Mr. Strand received two dollars, and it is interesting to note that during the intervening years the firm mentioned has continued to award him a regular patronage, as have also many other large concerns to which he gave service in the early period of his independent business career. In 1912, after having placed his business on a secure footing, Mr. Strand formed a partnership with L. A. A. Holmburg, and at this time the present title of Gustaf F. Strand & Company was adopted. In 1914 Mr. Strand purchased his partner's interest, and in the following year he removed his establishment to more suitable quarters, at 315 South Clinton street. Here he now gives employment to a number of skilled workmen, and here he has one of the best equipped pattern and model shops in Chicago, the capacity of the same being fully tested at times by the demands of appreciative patrons. The value of the output of Mr. Strand's manufacturing establishment for the first month was eighty-one dollars, and his incidental expenses for the month were forty dollars in wages to his boy assistant; twenty-five dollars for rent; and four dollars for power supplied, leaving him a balance of twelve dollars. Mr. Strand's establishment now receives a substantial patronage on the part of leading manufacturing concerns in Chicago, and he receives also frequent orders for his high-grade models and patterns on the part of manufacturers and inventors in other sections of the Union. Mr. Strand is intrinsically a man of industry and ambition, and he is of the sturdy type that finds enjoyment in close application to business, his maximum pleasure being in utilizing his otherwise leisure moments in the development of intricate and delicate models and patterns of mechanical order. His skill and his correct methods have been the basis on which he has developed a very prosperous and essentially representative enterprise in his chosen field of endeavor.

At Grenna, a town on the east shore of Lake Wettern, Sweden, Gustaf F. Strand was born October 3, 1868, a son of Johan and Aquilina (Gilburg) Strand. In his native town he made good use of the advantages of the public schools and there also he learned the trade of woodworker, under the able direction of his father. In 1887, at the age of nineteen years, he came to the United States, and he first made his way to the farm of his uncle, Oscar Gilburg, near Fowler, Indiana. There he remained eighteen months and he then, in 1889, came to Chicago, where he found employment as a stair-builder for the firm of Larson & Company. Six months later he took a position in the pattern shop of the Bramer-Strand Company on Canal street, and there he learned the trade of patternmaker, in which he became an expert. He remained with this company nearly four years and then resigned his position, in order to extend his experience and gain new ideas relative to his trade, and within a short time thereafter he took a position with the Monash-Junker Company. Later he was employed eight years in the pattern shop of the Deering Harvester Company, and his next association was with Otto Rabe, on Desplaines street. There he remained three years. The next four years he was employed by

E. C. Colson. First two years employed as a patternmaker, the last two years as a foreman. In the meanwhile he carefully conserved his earnings and further manifested his good judgment by investing in Chicago realty. He is now the owner of two desirable residence properties and also of a well established and profitable business enterprise, so that he has accounted well for himself during the period of his residence in the United States. His political support is given to the Republican party and he and his wife hold the faith of the Lutheran church.

March 9, 1895, recorded the marriage of Mr. Strand to Miss Julia M. Hallstrom, a daughter of Andrew and Johanna Hallstrom, of Chicago, she having been a child when her parents came from Sweden to America. Mr. and Mrs. Strand have two children,—Alice and Linnea.

THE MELLISH-HAYWARD COMPANY

As practical heating and ventilating and general sheet metal work and consulting engineers this company has developed one of the largest and most important industrial enterprises of its kind in Chicago, and, like many another of the representative concerns of the western metropolis, this corporation is the outgrowth of an individual enterprise that was of most modest order. In 1895 Frank Mellish, with an available capital of only one hundred and fifty dollars but with technical ability and experience of indubitable industrial and commercial value, opened a small shop at 236 Lake street, where he utilized only twenty-four hundred square feet of floor space and at the beginning had but one assistant. As an expert mechanic he initiated his new enterprise with the hard and fast policy of turning out only the best type of work and utilizing for the purpose the best of materials. From this rule he has never permitted the slightest deviation in the succeeding years, and there can be no measure of doubt that it has played a large part in conserving the definite success of the business, which is now of extensive and important order, the while he has brought to bear also exceptional executive and financial acumen and resourcefulness. The company of which he is president has extended its business from the Atlantic to the Pacific coast, more than fifty men being represented on the shop pay roll, in addition to eight employes in the offices of the concern. Since the 1st of May, 1913, the business has been conducted at the present location, 213-15 West Austin avenue, where the well equipped plant occupies three floors of a modern industrial building and utilizes an aggregate floor space of more than twenty-five thousand square feet. The most modern metal-working machinery and accessories mark the equipment of the plant, and of the splendid expansion of the enterprise an indication is given in a comparison of the company's pay roll in earlier years with that of the present time. At the beginning Mr. Mellish guaged his weekly pay roll at sixty dollars, and this included his own drawing account, while in various weeks he did not personally draw even half pay. In 1907 the pay roll represented two hundred and seventy-five dollars weekly; the following year showed an increase to three hundred and seventy-three dollars; 1909 more than doubled

the weekly average, as it represented eight hundred and sixty-six dollars; and for the year 1917 the weekly pay roll never ran below two thousand dollars.

In 1895 C. E. Murray entered the employ of Mr. Mellish, as an apprentice at the tinner's trade, and he has continued to be associated with the business during the entire intervening period. In the early months of his independent activities in his present field of enterprise Mr. Mellish gained appreciative customers who have continued to award him their patronage consecutively during the passing years. These concerns and hundreds of others who place regular orders with the Mellish-Hayward Company have stated unequivocally that the company are the best contractors and engineers in the business and always send forth workmen who attend strictly and exclusively to their work when assigned to the installing of any equipment. The company now receives an aggregate average of about two thousand jobs annually and its business for the year 1917 was in excess of two hundred and fifty thousand dollars.

The Mellish-Hayward Company are builders of the Thomas patented air-washer and have made many large installations of this excellent and efficient device and system in important factories in the most diverse sections of the Union. The company also manufacture improved dust-collecting systems, and the factory output of the same for the year 1917 was four-thousand. Special attention is given also to the manufacturing of sheet-steel tanks of all sizes and designed for all manner of industrial uses, the company having recently completed in this department a large contract for the complete equipment of the new wholesale grocery establishment of John Sexton & Company, of Chicago. The products of the company's factory now find sale not only throughout the United States and the Canadian provinces but also in the various countries of Europe and South America. An important contract taken by the company in 1917 was for the construction of a boiler-plate coal-drying equipment for a large coal corporation in Australia. This equipment was noteworthy as representing the acme of perfection in modern mechanical construction in this line. The company's air-washers have been installed in leading establishments in many different states of the Union, as well as in those of a number of foreign countries. The company is engaged at the time of this writing, in the winter of 1917-18, in the erection for the Kansas City Railways Company an air-washing equipment which will represent an investment of ten thousand dollars, a similar equipment having recently been placed in the Union Depot in the same progressive Missouri metropolis. The company has important contracts of recent order, with the Chicago & Northwestern Railroad Company, for equipment in the city of Milwaukee, and one incidental to the completion of the magnificent new building of the Chicago Benevolent & Protective Order of Elks. In its special lines of production and contracting the company did noteworthy work on the new building of Medinah Temple, Ancient Arabic Order of the Nobles of the Mystic Shrine, in Chicago; the North American Restaurant Company, of this city; and the Carter White Lead Company, of West Pullman. The company is completing at the time of this writing a fifteen thousand dollar contract in the manufacturing and installing of boiler breeching for the Nekoosa Edwards Paper Company, of Fort Edwards, Wisconsin, this being probably the largest work of the kind ever constructed. The company's plant is equipped with the only cold-angle-iron-shaping machines in Chicago, and with the same is handled a large amount of

important work for the E. L. Ryerson & Sons Steel Company and leading steel-jobbing houses of Chicago. The plant has the most improved type of Oxweld acetylene welding and cutting equipment and through the same has the best of facilities for all kinds of pipe cutting and tapping. A recent addition to the plant is a crate-making department, fully equipped with swinging saws and other special accessories. Since the United States has become officially involved in the great European war the Mellish-Hayward Company has done an immense amount of work for other manufacturing concerns,—work designed and manufactured for government use in the prosecution of war, and the principals of the corporation are gratified in having been thus able to contribute their "bit" to the support of our national arms and the principles of democracy.

The Mellish-Hayward Company was incorporated under the laws of Illinois in the year 1909 and of its capital stock of twenty-five thousand dollars, seven thousand dollars remain in the treasury of the company, which has continued as a close corporation and the stock of which is now worth double its par value. The officers of the company are as here noted: Frank Mellish, president; W. W. Rockwood, secretary; and F. Mallish, treasurer. The company is represented in membership in the Sheet Metal Contractors' Association of America and with both the national and the Illinois organization of allied sheet-metal workers.

FRANK MELLISH

The context immediately preceding this article vouchshafes the information that Mr. Mellish was the founder of the now extensive and important industrial enterprise conducted by the Mellish-Hayward Company, of which he is president, and the brief review of the history of the company should be supplemented by more specific record concerning Mr. Mellish, who is one of the well known and thoroughly representative contracting engineers of America, his technical ability and his well ordered executive and administrative policies having proved the primary mediums through which has been developed the large and prosperous business of the company of which he is president.

Mr. Mellish was born in the city of London, England, on the 5th of November, 1862, and is a son of John and Lucy (Clark) Mellish. He was eight years of age at the time the family came to the United States, and here the major part of his early educational discipline was acquired in the public schools of Canada. At the age of 21 years he entered the employ of the Boynton Furnace Company, and from the position of foreman of shop work he won advancement to that of superintendent of the entire works. As an expert he traveled extensively for this Chicago corporation, supervising installation and other important work, and he continued in the employ of this company from 1884 until 1895. In the latter year he resigned his position, which involved entire charge of factory production and installation work, and engaged in independent business, under the title of F. Mellish & Company. In 1909, as a matter of commercial expediency germane to the great increase in the volume of his business, he effected the incorporation of the Mellish-Hayward Company, of which he has since been president. Mr. Mellish is a man of genial personality and has won to himself the staunchest

of friends in both business and social circles, few men being better known in connection with the metal trades in the United States. As a citizen he is most loyal and liberal and in politics he maintains an independent attitude. He is affiliated with the Masonic fraternity and the Independent Order of Odd Fellows, and he holds membership in the Mystic Athletic Club and the Berwyn Club, the family home being in the attractive suburb of Berwyn. He and his wife are earnest communicants of the Protestant Episcopal church, representing the ancestral faith of his parents, and were zealous communicants of the church of England prior to coming to the United States.

On the 23d of June, 1904, was solemnized the marriage of Mr. Mellish to Miss Ada Rockwood, of Chicago, and they have no children.

Mr. Mellish has been in the country since 1883 or a period of thirty-four years and since the day of his arrival he has been a loyal American citizen, having taken out his naturalization papers in six months after having reached Chicago. He has never affiliated himself with any British-American association or society, but has held pure allegiance to the American flag.

ELABORATED READY ROOFING COMPANY

The perseverance, research and resolute purpose of one man, constitutes the basis upon which has been founded and developed the important industrial enterprise conducted by this company. The remarkable product thus created by Mathias B. Becker, president of the company, has justified itself in efficiency and durability and needs no further voucher than the splendid success that has attended the development of the Elaborated Ready Roofing Company. The "square deal" policy has been that on which this substantial business has been developed and represents fully the personal characteristics of the honored founder of the business. The unexcelled process devised and perfected by Mr. Becker involves in a generic way the application of an asphalt preparation to wool felt of a grade and fiber that have proved by his careful and expensive experimentation to be suited to the purpose. It is saturated with a compound, the secret of which no one has been able to wrest from the company and its president, the inventor of the process. No notably valuable invention ever represented mere luck, but is the result of study, research, and experimentation. Long and careful work of this kind is what brought eventual success to Mr. Becker. Mathias B. Becker is consistently to be designated as the pioneer in inventing an effective process for the vulcanizing of wool faber and certain types of paper for roofing purposes.

The Elaborated Ready Roofing Company may be said to have initiated business in 1901, although its founder Mr. Becker, had previously devoted several years to experimental work in the producing of asphalt roofing, his work along this line having been mainly prosecuted in the basement of a grocery store, which he was conducting at the corner of Forty-seventh street and Prairie avenue. His energy was shown in constant application to varied lines of productive endeavor, as he had devised a superior type fiber wallboard for use in place of lath and plaster and had initiated the manufacturing of this product while still engaged in the grocery business and in handling outside work that augmented his income.

He utilized a large amount of money in experimental work, labored early and late and finally evolved a satisfactory product, though he continued to improve the same after manufacturing had been instituted. In establishing his new industry and developing the same he encountered a full quota of obstacles and difficulties, not the least of which was lack of fealty on the part of those who had become associated with him and whose advancement had been made possible only through him, the final outcome being that two or more of those whom he had thus aided including his brother, attempted to take advantage of this invention and establish independent business along the same line. Justice prevailed, however, and he triumphed over lies, and unprincipled slander. He has overcome opposition and has proved that no other concern can produce the unexcelled asphalt roofing that has brought him his high reputation and enduring success.

In 1898 Mr. Becker engaged in the retail grocery business at the corner of Forty-seventh street and Prairie avenue, and one day, in course of conversation with an acquaintance, the latter stated that he wished that he could obtain some kind of pliable paper-board so treated as to make a waterproof top for his carriage. This gave Mr. Becker an idea that led to a series of experiments. Finally he was able to produce a paper-board which was soft and pliable. This original piece of board was thrown into his area back of his store and after it had lain exposed to the elements for a year he found that it was still in perfect condition. This convinced Mr. Becker that he had discovered a valuable material for roofing that would far surpass shingles as well as other types of roofing. Through continued experiments he made great improvements in his process especially in the production of roofing in various designs and colors. He was the first to give ready roofing the appearance of shingles and slate through his invention of special machinery for the automatic marking and rolling of asphalt ready-roofing. This industrial enterprise has become one of vast importance.

In 1901, in an old laundry building on the rear of a lot at the corner of Fortieth and State streets, Mr. Becker began the manufacturing of his roofing. This original factory having a floor space of only eight hundred square feet and the principal equipment being an old bath-tub which he used as a kettle for compounding his asphalt preparations. The first machine utilized in his little plant was made in large part from a bicycle of Mr. Becker's daughter. Mr. Becker's only assistant was his brother Fred, whom he employed for this purpose. The first order received was for covering the roof of a shed, and the material utilized for this purpose was fifty pieces of roofing, each ten feet in length. A little later the contents of the factory bath-tub took fire, ruined this part of the equipment and nearly destroyed the building. Mr. Becker, however, secured a kettle, compensation for which was given in supplying roofing material to a small factory. The energetic and determined proprietor acted as salesman for his product in addition to supervising the work of the manfacturing, and he soon developed a trade whose demands were much in excess of the productive capacity of the little factory. In 1902, in order to place the enterprise upon a secure commercial basis, Mr. Becker obtained financial co-operation and effected the organization of the Elaborated Ready Roofing Company, which was incorporated with a capital stock of ten thousand dollars. He retained the controlling interest. In April of the same year Mr. Becker purchased a brick building at 4421-23 South LaSalle street, together with an adjoining vacant lot. With second-hand mate-

M. B. Buchen

rial he erected a factory building of twelve-hundred square feet floor space. Here the business was quickly developed to appreciable volume. Success and substantial growth was rapid. Operations continued to be vigorously carried forward on a constantly expanding scale under the able direction of Mr. Becker, who became president of the company at the time of its incorporation and who has since continued as its executive head. In raising the requisite capital Mr. Becker sold three thousand dollars worth of stock for fifteen hundred, to a man named Dahnel; three thousand dollars' worth to Harlan D. Cook, for five hundred dollars; and, entirely without compensation, *presented* three thousand dollars worth of stock to his brother Fred. The company thus began operations with a paid in capital of only two thousand dollars. In 1903 the factory was destroyed by fire with but nominal insurance. A new factory was forthwith erected, twice the size of the old. With the growth of the business, secrets pertaining to his process were stolen from Mr. Becker by those in whom he had placed implicit trust and who had profited by his generous interest. He had not obtained at that time patents on his process as originally devised, but in the face of treachery and malfeasance Mr. Becker continued his work with unabated zeal, and has had the satisfaction of seeing those who violated his trust fail to attain the success they expected through the purloining of his process of compounding. He has made such improvement as to effectually battle opposition. The secret process of the production of Elaborated Ready Roofing is now fully protected by letters patent. The Elaborated Ready Roofing Company now affords employment to many hundreds of men, in all of whom the president of the company manifests a kindly personal interest, and his advice is highly valued by the managers of his many branch establishments. Himself a protective worker, Mr. Becker is always glad to aid others to achieve success through worthy effort. His judgment is such that in few cases has his confidence been violated. A firm believer in the tenets of Christian Science, Mr. Becker exemplifies his faith in good works. He has found satisfaction in extending aid to others who are striving for success, besides which it may be noted that he has gained no slight prestige as a Christian Science practitioner.

Matthias B. Becker was born in the grand duchy of Luxemburg, a district whose interesting history has recorded its connection with German, French, Belgian and Netherlands governments, and the date of his nativity was October 1, 1859. He is a son of Peter and Helen (Buhren) Becker, who passed their entire lives in Luxemburg, the subject of this review having been a lad of ten years at the time of his father's death, in 1869. He received his rudimentary education in the school of his native place, and when eleven years of age, after a quarrel with his teacher, he ran away from home and became dependent upon his own resources. His independent and self-reliant spirit was thus early manifested and it is needless to say that it has continued as a dominating attribute of his character. For five years Mr. Becker worked as a youthful employe along the French border, and his wages during this period averaged three dollars a month. At the age of sixteen years he had saved enough money to enable him to follow the course of his youthful ambition and he set forth alone for the United States. Soon after his arrival he made his way to Chicago. Here he found employment at the Union Stock Yards, at a compensation of one dollar per day. Later he found more remunerative employment in the packing houses. His

ability and efficiency brought him promotion to the position of foreman, and later, to that of department superintendent. He continued his association with Chicago's great packing industry for the long period of twenty-five years. In 1891 he and his younger brother, Fred, went to Denver, Colorado, where he held for two years the position of superintendent of the Plant of the Colorado Packing Company. He then returned to Chicago and was placed in charge of the sausage-casing business of Beckstein & Company. In the meanwhile he had made wise investments of his savings in Chicago real-estate which returned him about sixty dollars a month in rents. He also had in reserve several thousand dollars, so that about one year later his modest ambition prompted him to retire from active business. After three years of this inactivity, he opened his grocery store in one of his own buildings. His business for the first year was so satisfactory that he decided to enlarge his scope of operation. He accordingly formed a partnership with John Hoxie, with a capital of ten thousand dollars. The Becker & Hoxie firm built up a good business in the retailing of groceries, but as their faith in human nature was expressed in undue credit to customers, the dimensions of the trade were so insufficiently covered with cash, in three years the firm was compelled to retire from business. It was during this period that Mr. Becker carried on his experiments that resulted in the discovery of the process on which is founded the extensive business now conducted by the Elaborated Ready Roofing Company, as described in the foregoing article.

On the 6th of September, 1881, was solemnized the marriage of Mr. Becker to Miss Mary Mootz, who like himself is a native of Luxemburg. They have three children—Susan is the widow of Raymond R. Levis; Lillian is the wife of J. Herbert Levis; and Anna is the wife of W. Walter Levis,—the three sisters having married the three Levis brothers.

THE ATLAS MODEL WORKS

One of the important and specially interesting industrial plants of Chicago is that of the Atlas Model Works, and there is no measure of inconsistency in pronouncing the same as one of the leading institutions of the kind in the city. Here are the best of facilities for the making of all kinds of fine models, machinery and patterns, special attention being given to experimental work and to the designing, developing and repairing of special machinery and mechanical and electrical apparatus. The company's well ordered industrial plant is established at 123-125 South Fifth avenue, and the business was founded in February, 1911, by the firm of Freidemann & Frohne. the enterprise having been conducted by this firm until April 2, 1917, when George Heger effected the incorporation of the business under the present title and is the owner of all the stock of the company. Under the new regime the business has made prodigious strides and in connection therewith has been developed a surplus fund equal to the purchase price that was paid for the business.

Upon assuming control of the business Mr. Heger installed in the plant a large amount of new machinery, including lathes, drills, furnaces, milling ma-

chines, etc., besides providing the best of modern tools and accessories. The equipment of the plant as now constituted represents the investment of many thousands of dollars. The Atlas Model Works occupy more than four thousand square feet of floor space and every department of the plant is maintained at the highest standard in equipment and general facilities, the workmen having access to a score of large cabinets of special tools that will meet every possible demand. The factory is constantly doing a large amount of fine precision work in both brass and steel, and in this field the clientage includes some of the leading industrial concerns of the United States, among which may be mentioned the Hyatt Roller Bearing Company, of Harrison, New Jersey; the Western Union Telegraph Company; the Chicago Stock Gear Company, the University of Illinois and the Bucyrus Manufacturing Company, of Milwaukee, Wisconsin. Mr. Heger, president of the company, is a man of fine technical skill and in connection with the business he makes a specialty of internal gears, besides which he has designed and perfected a number of special machine attachments which are used in connection with the equipment of his factory.

The Atlas Model Works provides the most efficient service in the manufacturing of mechanical and electrical models, tools, special machinery models and patterns, and to the designing and developing and demonstration of models in miniature or full working size. In the domain of finer mechanical work special attention is given to experimental service of scientific nature, and the motto of the concern is, "Assist Clients to Achieve Success." In the confidential relations that exist in the service of this company the utmost loyalty is shown in the developing and making successful the inventions of clients, and neither Mr. Heger or his employes are interested in the perfecting of any technical ideas or inventions of their own. The factory is constantly turning out the highest type of work in brass and steel and is equipped for the undertaking of work in its line, regardless of problems involved or size of the product required. In the establishment a full complement of highly skilled mechanics and designers is constantly retained.

GEORGE HEGER

George Heger, the executive head of the Atlas Model Works, was born in the city of Fort Wayne, Indiana, on the 7th of September, 1871, and there he acquired his early educational discipline in the Lutheran parochial schools. Later he completed an effective course in electrical engineering, in a leading technical school, and thereafter he held for fourteen years a position in the experimental department of the Fort Wayne plant of the General Electric Company. Upon his severing this alliance he was for one year employed in Chicago by the Western Electric Company, the ensuing three years found him associated with the Regal Model Works, and he left this concern to become a foreman in the establishment of the American Model Works. Thereafter he was for three years associated in a confidential capacity with Mr. Oliver, the distinguished inventor of the Oliver typewriter, and this relationship terminated only with the death of Mr. Oliver.

In 1917 Mr. Heger effected the incorporation of the Atlas Model Works, with

a capital stock of twenty-five hundred dollars, and he has since been president of the corporation, his wife being its vice-president, Miss Walters its secretary, and Oscar A. Stoffels the treasurer. Concerning the executive head of this company the following appreciative estimate has been given by one familiar with his career: "Mr. Heger is in every sense of the word a self-made man, and he has made an admirable record in the industrial world. He is a man of fine mental poise and marked mechanical and executive ability, is loyal and progressive as a citizen and unequivocally popular among social and business associates. He and his wife are zealous communicants of the Lutheran church and the attractive family home, known for its gracious hospitality, is at 5310 Belle Plaine avenue."

JOHN P. TEMPLEMAN

A place of definite priority has been gained by Mr. Templeman in the important field developing and manufacturing all manner of patterns and models for industrial applications, including those pertaining to automobiles, electrical apparatus and accessories, machine and railway devices, besides which his establishment has the best of facilities for experimental and development work of all kinds.

In September, 1914 Mr. Templeman founded his present business enterprise and from the start he has utilized for his factory requirements quarters in the building at 740-42 West Van Buren street, where he now has in requisition for his shops six thousand square feet of floor space,—two entire floors of the building. The mechanical equipment in all departments of the establishment is of the most approved modern type, and here are unexcelled facilities for the production of patterns and models for all industrial purposes, the concern having handled a large amount of important work for many of the leading manufacturing institutions of the states of the middle west. In the Templeman factory constant employment is being given to a corps of twelve or more skilled artisans, and at the time of this writing, at the opening of the year 1918, the concern is doing important work for the United States government, incidental to the manifold preparations for the participation of the nation in the great European war.

John P. Templeman, founder and owner of the important industrial enterprise noted in the preceding paragraphs, was born in Dundee, Scotland, on the 5th of May, 1883. He was five years of age at the time when the family home was established in Chicago, and after having duly profited by the advantages of the public schools he completed an effective technical course in the Lewis Institute. He has been since 1900 actively identified with the industrial pattern and model business and is known as an expert and authority in this field of enterprise. In addition to having built up the prosperous business of which mention has been made, Mr. Templeman is also vice-president of the Tempco Manufacturing Company, which has its factory at 753 West Van Buren street and of which his brother Frank is president, this company being incorporated under the laws of Illinois, with a capital stock of twenty-five thousand dollars. Frank Templeman is an automobile engineer of ability and wide experience and has been identified with automobile mechanics during the entire course of his business

career. He invented and perfected the Tempco Spark Plug Tool, the Tempco Self-cleaning Auto Washer, the Tempco Wire Wheel Washer, and the Tempco Chassis Washer, all of which are patented. The Tempco Manufacturing Company is successfully engaged in the manufacturing of these valuable devices and other specialties pertinent to the upkeep of motor vehicles, and the products are used by large corporations maintaining fleets of motor trucks, not only throughout the United States but also in nearly all foreign countries. The company has a well equipped factory, gives employment to a force of skilled workmen and its substantial trade shows a constantly cumulative tendency.

PAUL DICKINSON, INC.

In the manufacturing of the Dickinson patented round-house smokestacks and ventilators, as well as other important specialties extensively used in connection with railway operations, this corporation conducts the largest business of the kind in the world, and, it is needless to say, contributes definitely to the industrial prestige of Chicago, the various products of the Dickinson manufacturing plant being held as standard appliances in railway service, virtually all important railways in the United States, Canada, Mexico and Cuba making use of these appliances and accessories and similar service being given in connection with many railway lines in European and South American countries.

The business conducted under the corporate title of Paul Dickinson was founded in 1888, when the firm of Turner, Dickinson & Company established the Garden City Foundry, at the corner of Churchill street and North Hoyne avenue. Later a reorganization of the business was attended with the retirement of Geo. D. Turner, senior member of the firm, and at this juncture Mr. Dickinson assumed sole ownership and control, Mr. Turner having retired in order to engage in the general foundry business in Ohio. In the early part of the year 1906 the business was incorporated under the present title,—the name of one of the founders of the enterprise,—and in applying for its charter under the laws of Illinois designated its capital stock as one hundred thousand dollars. The various appliances manufactured by this corporation represent the concrete results of nearly thirty years of persistent and intelligent work in devising and improving mechanisms and specialties for the use of railways, and the name of Dickinson is now a synonym of the highest standard of excellence in supplies of this order, the working of the law of the "survival of the fittest" being clearly exemplified in the record of the development and consecutive growth of the business, as the concern has invariably met and excelled all competition and been a recognized leader in the achievement of improvements in the products which it manufactures. These products in a general way are maintained at a definite standard in design, type and size, and the best of provisions are made also for the producing of special designs and sizes to meet specific requirements aside from the standard line. Profiting by the lessons of long experience, the company utilizes cast iron in the production of the Dickinson round-house smokestacks, ventilators, etc., since it has been clearly demonstrated that no other material will so effectively withstand the disintegrating effects of round-house and loco-

motive gases and the normal climatic elements. It is not within the province of this publication to attempt description of the many valuable features in the construction and operation of this remarkable smokestack, and such data are readily to be obtained through the medium of catalogues and other literature issued by the manufacturers. The company has placed on the market also the Dickinson telescope jack, which creates and insures a draft in the locomotive during the process of firing up, besides conserving the heat which otherwise would be carried out of the round house; in cold climates and during the period of winter this jack reduces to the minimum the amount of heat wastage.

The Dickinson round-house ventilators are made exclusively of cast iron, being therefore practically indestructible, and they are carried in stock in dimensions varying from eighteen to forty-eight inches in diameter, any desired length and so designed as to be adjustable to either ridge or slope roofs. The cast-iron chimneys manufactured at the Dickinson plant are the recognized standard in this special railway equipment.

The Dickinson corporation maintains general sales offices in New York city, St. Louis, Denver, San Francisco and other leading cities of the Union, as well as in various foreign countries, and the concern holds prestige as a pioneer in its special field of industrial productivity.

The thoroughly modern manufacturing plant of Paul Dickinson, Inc., occupies three acres of ground at the corner of Thirty-fourth street and Western avenue, and in the well equipped factory and foundry is employed a force of seventy-five skilled mechanics, as well as an efficient staff of engineers and draftsmen.

Since the death of Paul Dickinson, the honored founder of the business, who passed from the stage of life's mortal endeavors on the 31st of August, 1906, the active management of the enterprise has been under the effective executive supervision of Arthur J. Filkins, the vice-president of the corporation. The general offices of the company were maintained in the Security building, Madison street and Fifth avenue, until 1914, when it was found expedient to remove the offices to the factory. In recent years the company has obtained numerous patents on valuable inventions developed by the engineering staff of the company. Mr. Filkins, a vigorous and resourceful executive, has been for many years actively associated with the business and has played an important part in the development and advancement of the important industrial enterprise of which he is now the active executive head, the while he has a wide acquaintanceship with members of the operating staffs of the leading railway systems of the United States.

GRAND CROSSING BOILER WORKS

Under this title is conducted a substantial and important industrial enterprise that contributes its quota to the commercial precedence of the western metropolis, and the well equipped manufacturing plant is located at 1244 East Seventy-third street. The business was founded in 1897, by T. C. Dube, who has continued as the sole owner of the same, his original factory having been established at 7426 South Chicago avenue, where he engaged in the manufacturing of water-heaters and made provision for general boiler repair work.

His brother, J. J. Dube, became his valued coadjutor in handling the practical details of the business and continued his alliance with the same until 1911, when he severed his association to accept a responsible position with the Kewaunee Boiler Company, one of the important industrial corporations of the state of Illinois.

Mr. Dube was the originator of the rocking boiler-grates now in almost universal use and was also the first to engage in the manufacturing of steel boilers of this type. Since 1902 he has maintained precedence as one of the country's leading manufacturers of water-heating and garbage-burning combination apparatus for use in dwellings and other buildings, and of this valuable device he has made more than five thousand installations in the best residences, apartment buildings, hotels, hospitals, etc., throughout the United States. This combination apparatus is made of heavy steel boilerplate, jointed and braced to withstand the test of one hundred pounds of hydrostatic pressure. The garbage-burning plate is made of the best boiler tubing, securely fastened by being expanded into openings in the inner shell, and it forms a part of the heating surface, with constant circulation of water through the tubes, by which means is greatly increased the efficiency of the heater, besides is obviated heat injury to the tubes. In the outer shell, opposite the ends of each tube, are cleanout plugs which may be readily removed and thus make possible the thorough removal of sediment or scale in the tubes. Cleanouts are provided also at each corner end, for the removing of any sediment in water jackets. The garbage chamber and firepot is wide and deep, with large and convenient doors. The base is furnished with sectional rocking boiler-grates and these readily break up all cinders, thus permitting the use of any type of soft coal. The "Dube Combined Water Heater and Garbage Burner" has no bypass for the heated gases to escape to the smoke-stack without coming in contact with the garbage, and in this special point the device is superior to all other types manufactured. These Dube boilers and burners are manufactured in a good number of sizes and special sizes are manufactured to order, to meet the demands of particular specifications.

In 1901 Mr. Dube removed his factory to the present location, after here erecting a substantial building specially constructed and equipped for his purposes. The building is fifty-four by eighty-six feet in lateral dimensions, with trestled roof, and the equipment of metal working machinery and accessories is of the most improved type, the power plant of the establishment being installed in a building erected for the purpose. Mr. Dube, with indefatigable energy and progressivenses, has developed a most substantial and successful industrial enterprise and has gained place as one of the representative manufacturers of the Chicago industrial field.

T. C. DUBE

T. C. Dube, proprietor of the Grand Crossing Boiler Works, was born in Toronto, Canada, on the 12th of April, 1863. Family came to Chicago 1866, here gained his early education in the public schools and here has found ample scope for productive and successful activities as a manufacturer. He served in his youth a thorough apprenticeship to the boilermaker's trade, having initiated

this discipline in 1879, in the National Boiler Works. He continued in the employ of this corporation for six years and for fourteen years thereafter was employed by John Mohr & Sons. He then resigned his position to establish his independent manufacturing enterprise, as noted in the preceding article, his active association with the boilermaking industry having covered a period of fully thirty-five years. He is known as an authority in heating and garbage-disposal problems, is an honorary member of the National Association of Heating Engineers and an active and popular member of the Chicago Boiler Manufacturers' Association. He has been a deep student of the scientific and mechanical problems involved in the line of enterprise with which he has been so long identified, and the products of his factory are now specified as a standard part of equipment in the construction of finer residences and high-grade apartment buildings, hotels, hospitals etc., while the trade of his establishment has been extended into virtually all parts of the Union. Mr. Dube is not only a strong and resourceful business man but is also one of such genial personality that he has gained the enduring friendship of those with whom he has come in contact in business and social relations. He has been one of the world's workers and thus is considerate and kindly in his association with his employes, to whom he pays the highest wages known in the local field of enterprise of this order. He is financially interested in various other manufacturing enterprises but continues to give his undivided attention to the management of the substantial industry which he founded and has developed, that of the Grand Crossing Boiler Works.

JOHN RATH COOPERAGE COMPANY

An important and substantial exemplification of basic industrialism in Chicago is given by the John Rath Cooperage Company, and the business has been developed from a most modest inception, more than thirty years ago, to status as one of the largest of the kind in the western metropolis.

In the early '80s John Rath, a native of Vienna, Austria, a cooper by trade and a man of appreciable financial resources, came to the United States and established his residence in Chicago, where he began in a small way the manufacturing of beer kegs. His factory was located on California avenue and he developed so prosperous a business that he eventually found it necessary to employ about ten skilled coopers. A man of ability and sterling worth, he laid the foundation for substantial success as a manufacturer, but his labors were terminated within less than a decade after he had established his home in the western metropolis, he having been but forty-nine years of age at the time of his death, in 1891. In the following year his son and namesake, John Rath, Jr., effected the incorporation of the business under the present title of the John Rath Cooperage Company, the enterprise having been established upon a substantial and enduring foundation by the honored father and the capital stock being placed at thirty-six thousand dollars at the time of incorporation. John Rath, Jr., became president of the company and A. O. Blaich its secretary. Under the able and careful management of Mr. Rath the business rapidly expanded in scope and importance, with the result that it became imperative to enlarge the manufacturing plant and to

John M. Ralls

install modern machinery to produce work that had previously been done by hand. In 1903 the company completed the erection and equipment of a large and modern cooperage plant on a tract of four acres that had been acquired at the corner of Kilpatrick street and West North avenue. In the new institution the force of employes was increased to sixty coopers and the trade had in the meanwhile been extended into the various states of the middle west. The output of the factory for the year 1904 was one hundred thousand containers, representing the best types of cooperage. In the manufactory at the present time is retained an average force of one hundred and fifty operatives and the average output is one hundred and sixty thousand packages annually, the institution being now the second largest of its special kind in the entire United States, the while the trade is widely disseminated, attention being given principally to the manufacture of high-grade brewers' cooperage.

John Rath, president and general manager of the John Rath Cooperage Company, was born in the city of Vienna, Austria, on the 7th of April, 1870, a son of John and Eloise (Binder) Rath. The devoted mother long survived her husband and was seventy-four years of age at the time of her death, which occurred in Chicago, in 1916. Mr. Rath acquired his rudimentary education in his native city and was a lad of about fourteen years at the time of the family immigration to America. He was afforded the advantages of the public schools of Chicago and after leaving school he learned the trade of cooper in his father's establishment. He was twenty-one years of age at the time of his father's death and his technical training and business experience well fortified him for assuming charge of the substantial manufacturing enterprise of which he has since continued the executive head. His initiative and executive ability has further been shown by his active association with the founding and developing of other important industrial enterprises in Chicago. In 1912 Mr. Rath organized the Available Truck Company, which was incorporated with a capital stock of twenty-five thousand dollars and which is successfully engaged in the manufacturing of a commercial motor truck of the highest grade, the factory being established on the same site as that occupied by the plant of the John Rath Cooperage Company. The Available Truck Company, of which Mr. Rath is president and manager, has already gained substantial vantage-place in the field of truck manufacturing, and the factory output has reached an annual average of one hundred and fifty of the high-grade automobile trucks, concerning which the following statements have been made in advertising matter issued by the company:

"In designing the Available chassis we have given full consideration to every worthy mechanical device. We have tested and tried every good motor. We have fed these good motors with gas from different carburetors and we have exploded a dozen ignition theories in our ceaseless search for service and economy. We have tried the holding, pulling and transmitting power of almost every type of transmission known to motordom, and on the points of control, braking, and general truck building we have steadily held to the highest standards of quality, simplicity, strength and service. In the Available chassis we present what we believe to be—and what more men are proving every day to be—the most economical, practical, serviceable one, two, three-and-one-half, and five-ton trucks within any man's buying reach."

In 1917 Mr. Rath organized the Chicago Sanitary Water Company, which is

incorporated with a capital stock of three hundred thousand dollars and which bases operations on the ownership of a patented process for the chilling of the celebrated Waukesha spring water and placing the same into one-gallon vacuum containers for distribution. Within the brief intervening period the company has gained a substantial and representative clientele and is giving regular distribution service, especially in the Loop district of Chicago. Of this company J. Herman Katz, a prominent Chicago lumberman, is president, and Mr. Rath is treasurer.

Mr. Rath holds membership in the Illinois Manufacturers' Association, the Manufacturers & Dealers League of Chicago, the Chicago Association of Commerce and the National Manufacturers & Dealers Association. His political allegiance is given to the Democratic party, he is a liberal and public-spirited citizen and has gained prestige as one of the aggressive and representative business men of the city that has been his home since his boyhood. He has a wide circle of friends in both business and social circles and is affiliated with the Masonic fraternity.

In the year 1891 was recorded the marriage of Mr. Rath to Miss Emma Fernitz, of Louisville, Kentucky, and they reside in the attractive suburb of North West Side.

FRANK HENNEBOHLE

As an inventor and manufacturer of steam, hydraulic, air, gas and general specialties Mr. Hennebohle has gained national prestige and incidentally he is consistently to be designated as one of the most prolific and resourceful inventors in the city of Chicago, which has gained much through his interposition as one of the city's essentially representative inventors and captains of Industry. His factory, remarkable for the diversity and excellence of its mechanical equipment and facilities, is located at Eighty-first street and South Chicago avenue. As an inventor Mr. Hennebohle has scores of important patents registered in every civilized country of the world, and many of his inventions, all of the greatest practical utility find a general requisition throughout the industrial world. Of one of his most important inventions, represented in balanced multiple engines and locomotives, more specific mention will be made in later paragraphs of this review.

Mr. Hennebohle was born and reared in Westphalia, Germany, where he received excellent educational advantages and also served a most thorough apprenticeship as a machinist. He finally became a master mechanic in a large factory devoted to the manufacturing of machinery in Westphalia, Germany, and he continued this industrial alliance until 1880, when he immigrated to America and established his residence in Chicago. Here he readily found profitable employment as a skilled and expert mechanic, and his inventive genius soon found opportunity for effective exemplification. In 1884 he invented three and four-way Hydraulic operating valves; in 1885 he invented a remarkable metallic packing for stuffing boxes and casings, and in 1886 he received patents on this invention. In the year 1889 invented automatic pressure regulators. In the latter year he engaged in the manufacturing of same, also his metallic packing,

establishing his headquarters in his own modest factory, at the corner of Ninety-first street and Ontario avenue. A number of other important inventions followed in successive course, were patented and were added to the output of the factory. During the World Columbian Exposition Mr. Hennebohle was compelled to build another factory. On the 22d of December, 1908, he received a patent on his new and improved self-adjustable metallic packing, representing a distinct improvement upon his original invention, and a further improvement resulted in the granting of another patent in January, 1910. This packing has gained full recognition as being technically, mechanically and practically perfect and as being the best product available for use in packing mechanisms for the production and transmission of steam, water, gas, air and ammonia. Within the necessarily limited confines of this article it is impossible to give details concerning the manifold inventions that stand to the credit and distinction of Mr. Hennebohle but a list of his principal inventions may consistently be entered, as follows:

Automatic engine stop valve, patented November 1, 1910, safety-system valves for ammonia refrigerating plants, patented September 7, 1909. The safety system for Ammonia Refrigerating Plants patented by Mr. Hennebohle in September, 1909, are in use all over the world. One of the objects of this invention is to provide means for the automatic cutting off the escape of Ammonia. Thousands of these safety stops valves are in use all over the country and even in Australia. An owner of an Ammonia plant could not make a better investment than to install this valve in his plant, which will give him a guarantee to prevent the loss of life and property. The valve in the suction line is the most important. Automatic combustion, atmospheric, noiseless relief and back-pressure valve, patented May 16, 1905; automatic governor for pulp grinders; horizontal, noiseless relief-valve for condensing engines only; vertical, noiseless relief-valve; noiseless, automatic, double relief-valves; horizontal, noiseless back-pressure valves for non-condensing engines only and a similar device for condensing engines; semi-balanced, straightway valve-cock, and also three-way and four-way operating cocks, upon all of which patents were granted September 18, 1906; three-way hydraulic valve, four-way hydraulic valve and duplex-pressure hydraulic valve, patented April 17, 1906; balanced hydraulic valves for heavy-pressure, to the amount of four thousand or more pounds to the square inch; quick-opening balanced inlet and throttle valve, angle throttle valve, and top-inlet stop; angular automatic and also duplex steam check and stop valves, patented February 11, 1902; automatic pressure regulators for marine or railroad use, also automatic gas and air regulators in fifteen different designs, patented automatic gas-shut-off valve, for controlling flow of gas automatically or thermostatically from city gas mains to pipes within buildings; automatic engine stop-valve, patented November 1, 1910; automatic measuring valves for liquid; quick opening and closing valves; vacuum-pressure valves. It is conceded that the Hennebohle automatic stop safety valve is the greatest invention in machine appliances yet produced for the saving of life and property. In July, 1902, Mr. Hennebohle manufactured the largest noiseless, automatic back-pressure-valves ever produced, these two valves having been made for the Colorado Fuel & Iron Company, of Bessemer, Colorado, which corporation gave an additional order for two more of the great valves on February 17th of the following year.

Under patents dated June 25, 1907; December 22, 1908; February 3 and 14,

1914, Mr. Hennebohle has recently constructed in his factory working models of his balanced multiple engines in the following designs: Stationary; stationary-driving, rotary pump and dynamo engine; post or wall engine; cross compound reversing engine; pumping and compressing engine; tandem and steeple compound engine; balanced quadruple locomotive engine. The wonderful invention, not yet introduced on the market, has been pronounced 'the fastest and strongest reciprocating engine in the world,'' and is applicable to use on land or water with no fear of friction. This represents a distinct innovation and revolution in motive power and the Hennebohle balanced multiple engines are certain to become the standard for locomotives and marine use, as well as to bring enduring fame to the inventor. It is not necessary to attempt a description of this marvellous engine in a circumscribed review of this nature, and such data are extraneous to the province of this publication, technical information being available through other sources. However, the following statements are entitled to reproduction in this connection:

''The balanced multiple engine is not the only invention of Frank Hennebohle, as he has been connected with the patent offices as an inventor for thirty-five years and is the inventor and owner of twenty-five original, good, useful and beneficial patents in steam and hydraulic specialties. Of these specialties he is the sole manufacturer and the sale of the same has been extended into all parts of the industrial world. Upon his admirable inventions of supreme utility Mr. Hennebohle received medals and diplomas at the World's Columbian Exposition, held in Chicago in 1893, and since that time similar distinction has come to him in connection with other large power and rolling mill plants.''

Mr. Hennebohle received his initial patent July 28, 1885, and improvements have resulted in his reception of supplemental patents. On his more recent inventions of important order Mr. Hennebohle has received patents under the dates of August 3, 1915; June 13, 1916; and August 21, 1917, and at the time of this writing, in the winter of 1917, he has six patents pending, besides which he is applying himself with characteristic energy and ability to the solution of five specific mechanical problems that are manifestly destined to result in further inventions of great worth. Mr. Hennebohle has issued attractive catalogues and illustrated circulars that adequately describe the entire line of products manufactured in his factory, and of many of these it has been impossible to make mention in this article.

While conducting operations in his original factory in Chicago Mr. Hennebohle erected the first Alphonse Custodes patented smokestack ever placed in commission in the United States. This stack was manufactured by the inventor, by whom it was exhibited at the World's Columbian Exposition. After the close of the exposition Mr. Hennebohle obtained possession of this stack and erected it as an adjunct to his own factory. This special type of stack, the patents on which expired in 1911, is now used in all parts of the world.

The manufacturing plant of Mr. Hennebohle comprises a substantial and modern industrial building that is seventy-five by ninety feet in dimensions, the mechanical equipment being of that fine type which would naturally be demanded by so distinguished an inventor, and the corps of operatives including mechanics of the maximum ability and skill. From this Chicago manufacturing plant go forth products to all parts of the world, and thus is contributed a definite quota

to the fame of Chicago as a manufacturing and commercial center of supreme importance. Mr. Hennebohle is a man of broad mental grasp, distinctive inventive genius, excellent executive ability and sterling character,—a loyal and public-spirited citizen whom commands the esteem of all who know him and a successful captain of industry who has active membership in various scientific and engineering associations and clubs.

Mr. Hennebohle has invented several contrivances without applying for patents, and which are in daily use for the last thirty-five years in the largest Steel and Rolling Mills and which have saved many lives and limbs and made hard work easy, and not asking for any remuneration.

Mr. Hennebohle can solve any problem in the line of his specialties and gladly will correspond with any one who requires same.

AMERICAN ART PAPER MACHE WORKS

This corporation has the distinction of being the only one of its kind in Chicago and one of two only in the entire United States, and by it a substantial and representative business has been developed, as designers, decorators and manufacturers of paper mache advertising novelties, stage properties, etc. The general offices and factory of the company are established in a modern industrial building at 1405 Irving Park boulevard, and the importance of the concern from a commercial standpoint, as well as for the unique character of its output, makes specially consistent its recognition within the pages of this publication. The preface of one of the artistic catalogues issued by the company gives specific data that are entitled to reproduction with minor paraphrase, in this connection: "Paper mache has been recognized as one of the most essential parts of the art of window trimming and interior store decorating. The increased demand for paper mache for this purpose has made expedient the compilation of this catalogue, which affords an idea of the many artistic designs possible of production. the designs selected for illustration are those we have found to be best adapted for decorative work. However, we have moulds for several hundred different patterns, all suitable for special occasions and conditions, besides which provision is made for the production of original designs aside from those carried for regular issue. We are the largest producers of this class of work in the country and estimates are promptly furnished for the production of work of special design and according to definite specifications. Our facilities are such that we can manufacture anything in our line in large or small quantities, and furthermore we pride ourselves on our workmanship."

Among the many attractive products illustrated in the catalogue from which the foregoing quotation have been made may be noted national shields of various sizes and designs, the same being artistically painted in the national colors; ornamented national shields; crusaders' or Red Cross shields; carnival shields; fraternal emblems, including those of the official badge and the fez of the Mystic Shrine and the badges of the Loyal Order of Moose, the Knights of Pythias and the Benevolent & Protective Order of Elks: eagle mounted on national shield, the eagle being in strong relief and painted in gold, while the shield is in national

colors; spread eagles in different sizes and designs; rococo shields; dove of peace; parrots, peacocks, roosters, turkeys, cockatoos; butterflies; and representation of roasted turkeys and chickens; remarkably effective casts of fish, dogs, cats, monkeys, etc., in natural colors; statuary effects, including 'Greek Slave,' floating cupid, cupid with basket, adoring angel, Egyptian idol, etc.; natural-size heads, pedestals, candelabras, figures, art lamps and lamp shades; art bowls for floral displays or indirect lighting; jardinieres, and ornamental urns and bowls; crowns and other trappings for carnival use; coving for interior architectural purposes; picture-frame mouldings, rustic relief signs, letters, etc.

The business now conducted under the title of the American Art Paper Mache Works was founded in 1905, by Eugene Kraemer, who established a modest shop in the basement of a building at 1413 Irving Park boulevard, and who shortly afterward admitted Mr. C. O. Wilson to partnership in the new enterprise, the title adopted at this juncture having been the American Decorating Company, Mr. Wilson having been connected with the firm of Curtis & Leger and having had wide experience as a salesman in the territory commercially tributary to Chicago. After a period of three years Mr. Kraemer sold his interest in the business to Mr. Wilson and turned his attention to the motion-picture business, in which connection he erected one of the finest theaters for this order of amusement to be found on the North Side of Chicago, the interior decoration of the same representing an artistic revelation. The withdrawal of Mr. Kraemer caused the business of the American Decorating Company to fall to low ebb, as Mr. Wilson claimed ability rather as a salesman than as a manufacturer. When reverses threatened his business Mr. Wilson prevailed upon Mr. Kraemer to come to the rescue, and under these conditions the founder of the business, after disposing of his theater and other interests, resumed control and active management of the affairs of the company which he had founded. He found everything pertaining to the business to be in chaotic condition, and the policies that had brought disaster, together with a measure of commercial disrepute, had left affairs in such order that he found it far more difficult to rejuvenate and revive the business than it had been to establish and develop the same in the beginning. With characteristic energy and resourcefulness Mr. Kraemer applied himself to the rebuilding of the business, and he brought to bear the forces of long and varied technical and business experience and the fortifying influence of unsullied reputation and broad acquaintanceship, with the result that he soon placed the enterprise on its present high plane in the artistic and industrial world. He is considered one of the leading American authorities and experts in the manufacturing of paper-mache products and in applying the same to commercial, decorative and art uses. He has been a frequent and valued contributor to art and trade publications and has thus extended his fame as a connoisseur in his chosen field of enterprise.

Soon after Mr. Kraemer resumed control the factory was removed to the present well ordered quarters at 1405-9 Irving Park boulevard, the factory being forty by one hundred and twenty-five feet in dimensions and being equipped with the most approved machinery and accessories for the manufacture of the highest grade of paper-mache products. In 1914 the business was incorporated under its present title, the Illinois charter then granted fixing the capital stock at ten thou-

sand dollars. The officers of the company are as here noted: Eugene Kraemer, president; Albert Ankele, vice-president; A. Rakebrandt, secretary.

Mr. Kraemer's appreciation of decorative art has been marked by distinctive creative talent, and his interest in the same was aroused when he was still a child. A chance visit to a Chicago wood-carving establishment of what later became the present firm of Zangerle & Peterson gave him the privilege of watching the artistic workmanship of Mr. Peterson, who was then a woodcarver and foreman of the shop. Though he was at the time a lad of only twelve years he promptly expressed his desire to learn the woodcarving trade, and prior to this he had acquired no little knowledge of geometrical forms, drawing, painting, etc., so that in his conversation with Mr. Peterson he so impressed the latter that there came to him an offer of an apprenticeship in the shop. Under the effective direction of Mr. Peterson Mr. Kraemer applied himself diligently and appreciatively during the first eighteen months of his prescribed three years' term of apprenticeship, his remuneration for service having been of nominal order. Within that time he had learned all that could be taught him by his master, a specially skilled artisan, and at the expiration of eighty weeks he was voluntarily released from contract of apprenticeship, besides being given the eighty dollars that had accumulated through the firm's retention of one dollar each week for his wages, as a guaranty of faithful performance of his duties. In the short period of application Mr. Kraemer had gained such skill that he was able to do all kinds of work assigned to the best craftsmen in the shop, so that his release from his apprenticeship contract automatically gave him the prestige of a journeyman, with entitlement to a journeyman's wages. During his apprenticeship Mr. Kraemer had given much attention to wood carving of the most delicate order. In furtherance of his ambitious purpose he took up a through course of general and architectural drawing and painting, under competent instructors. After the completion of this fortifying course he re-entered the employ of the firm in whose shops he had served his apprenticeship, this action having been taken at the advice of his friend and patron, Mr. Peterson, who took deep interest in the youth and desired that he be given opportunities commensurate with his artistic talent and technical skill. His ambition further led him to learn the art of clay modeling, in which field he received instruction from private tutors of distinction. In the year 1905 Mr. Kraemer turned his attention, with characteristic verve and enthusiasm, to modeling in paper mache. After an experience of eighteen months in this field of production he decided to engage in the same line of business in an independent way, and then it was that he founded the business now conducted by the American Art Paper Mache Works, of which corporation he is president and of which adequate description has been given in the preceding context. Mr. Kraemer's extraordinary talent in designing art forms of paper-mache work soon gained to him favorable attention and supporting patronage on the part of representative Chicago concerns, including Marshall Field & Company and the celebrated firm of architects, D. H. Burnham & Company. For these and other important firms and corporations he still continues to execute orders for fine paper-mache work, and on the order books of his company are found represented such other leading Chicago houses as Mandel Brothers; Carson, Pirie, Scott & Company; the Boston Store; the Western Clock Works; Shack Artificial Flower Manufacturing Company; Great Northern Railway Company; White Enamel

Refrigerating Company; Rand, McNally & Company; A. Stein & Company; Haynes & Edwards Grain Company, and many prominent national advertisers and moving-picture producers. Mr. Kraemer recently completed for the American Surgical Congress a seventy-two foot model of a human vertebrae, and this is the largest example of paper-mache work ever produced in the United States.

Mr. Kraemer has individually designed several thousand special art forms that are manufactured by the company of which he is president, and in the turning out of the stock products and special designs a large force of highly skilled workmen are constantly employed.

BIRCH-HINTZ MANUFACTURING COMPANY

In placing upon the market mechanical devices of distinct value as an adjunct to important productive activities in the industrial world this Chicago concern has developed a manufacturing enterprise of broad scope, the general office and factory of the company being established at 1100-1110 South Kilbourn avenue, and the principals of the company, which is not incorporated, being William T. Birch and John C. Hintz. In a generic way the functions of the company may be designated as the manufacturing of the Birch patented pump valves, which are produced in a wide variety of sizes and are available for water works pumps and general pumping service, and other important products of the essential modern industrial plant include mechanical rubber moulds, hydraulic presses, tools and rubber working machinery of the highest standard. The company figures as one of the most extensive manufacturers of water works valves in the entire country, and represents the consolidation of the Birch Valve Manufacturing Company and the Chicago Mould & Machine Company.

The Birch Valve Manufacturing Company was founded in March, 1914, by William T. Birch, who had been granted three patents on the improved types of valves that had been invented and perfected by him. In a small shop at 970 Montana street he initiated the manufacturing of the high grade valves that bear his name and there he continued operations until November, 1916, when possession was taken of the new and modern factory erected for the purpose of expanding the productive scope of the enterprise in consonance with the rapidly increasing trade. The Chicago Mould & Machine Company was established in September, 1914, by John C. Hintz, and he utilized for his original productive headquarters the same modest factory that was occupied by Mr. Birch. Here he developed a prosperous business in the manufacturing of rubber moulds and special machinery for the use of rubber manufacturers. In November, 1916, Messrs. Birch and Hintz effected the consolidation of the two enterprises under the present title of the Birch-Hintz Manufacturing Company, and the most vigorous and well ordered policies have since been used in the regulation of the combined industrial enterprises, which are conducted under copartnership association.

The new and admirably equipped factory of the Birch-Hintz Company is located at the corner of South Kilbourn avenue and Fillmore street and is seventy-

five by one hundred and twenty-five feet in dimensions, the building being of brick construction and one story in height. In both departments has been provided the best of mechanical equipment and the forces of employes includes twenty-five expert mechanics. Mr. Birch, who has the general supervision of sales and the commercial end of the business, travels extensively and has successfully introduced the products of the factory in all parts of the Union, Mr. Hintz, a man of superior technical and inventive ability, having direct charge of the manufacturing and general productive functions of the business.

This company has developed a remarkably large volume of business in the manufacturing of the Birch valves for waterworks pumps and other pumping machinery, and in this field of industry is one of the largest concerns in the country, as previously stated in this context. Equal success has attended operations in the department devoted to the manufacturing of mechanical rubber-moulds, hydraulic presses and hand rollers, and a general line of tools and accessories used in rubber manufactories, the special machines turned out in this department of the institution being utilized by virtually all leading rubber and automobile-tire manufacturers. The company maintains selling agencies in all principal industrial and commercial centers throughout the United States and Canada, and has membership in the American Water Works Association, South Western Water Works Association, the Illinois Water Works Association, and the Indiana Sanitary Water Supply Association.

Apropos of the splendid development of this important industrial enterprise are the following statements from a bulletin issued by the company: "It's doing things that can't be done that makes the doing worth while, and once in a while we meet a user of pump valves who says, 'Birch pump valves are fine, but I have a pump that is a little too small and may soon have to purchase a new one, so that it won't pay me to go to the expense of installing new valves. Then we proceed to show him that his pump will do more if he will install Birch pump valves in a complete way. In most old pumps the valve area is too small, owing to the increased number of ribs demanded for the support of the old-style rubber valve, and this difficulty is obviated by the installation of the Birch valves, which increase the valve area and, with increased plunger speed and the elimination of valve slippage, increase pump capacities from ten to twenty-five per cent."

In the extensive list of municipalities and representative industrial concerns using the Birch valves are to be found the names of many important cities that have installed these improved valves in their waterworks systems, and among the more important industrial concerns represented on this list may be mentioned the following: American Car & Foundry Company, Detroit, Michigan; American Gas & Electric Company, Marion, Indiana; Armour & Company and Armour Glue Works, Chicago; Calumet & Hecla Mining Company, Calumet, Michigan; Carnegie Steel Company, Pittsburgh, Pennsylvania; International Harvester Company, Chicago; Lake Milling, Smelting & Refining Company, Point Mills, Michigan; Louisville & Nashville Railroad Company, Louisville, Kentucky; Morris & Company, Chicago; National Cash Register Company, Dayton, Ohio; Plankinton Packing Company, Milwaukee, Wisconsin; Simmons Manufacturing Company, Kenosha, Wisconsin; The Paul A. Sorg Paper Company, Middleton, Ohio; and the Wisconsin Steel Company, Chicago.

PREMIER TOOL WORKS

There have been brought to bear no latescent forces in the development and upbuilding of the prosperous industrial enterprise conducted under the above title, and excellence of products with efficiency of service has resulted in the upbuilding, within a comparatively brief period of time, of a most prosperous business, Charles Gutman being the sole proprietor and his well equipped industrial establishment being located at 3123-25 West Harrison street.

In May, 1916, Mr. Gutman became associated with others in founding the Premier Tool Works, and operations were initiated in a modest factory, the same having been in a building at the corner of Ravenswood avenue and Cuyler street. Shortly after beginning business Mr. Gutman purchased the entire interests of his partners, and he has since continued the enterprise in an individual and independent way. Upon assuming sole control of the business Mr. Gutman removed his factory to the present location, where he utilizes twenty-five hundred square feet of floor space, the plant being fully equipped with modern machinery, tools and other accessories for the prompt and efficient handling of all work in the manufacturing of high-grade tools. Mr. Gutman now has on his list of patrons many important manufacturing institutions in Chicago and in other parts of the middle west, and among the Chicago concerns that constantly make use of the products of the Premier Tool Works may be noted the Automatic Electric Company, the Stewart Phonograph Company and the American Can Company, Shonk Company and many others. The Premier Tool Works produces the highest grade of special tools, dies, jigs, models, etc., and gives special attention to the designing and perfecting of special machine parts. Mr. Gutman is known for his exceptional mechanical and inventive ability and has invented various valuable labor saving devices.

CHARLES GUTMAN

Charles Gutman, proprietor of the Premier Tool Works, was born in the city of Mitau, capital of the Russian province of Courland, and the date of his nativity was September 27, 1883. He was reared and educated in his native city and there also he found in his youth definite opportunities for the development of his exceptional mechanical genius. In 1902 Mr. Gutman came to the United States and in the city of Baltimore, Maryland, he readily found employment as an expert tool and die maker. He attended the Maryland Institute from which he graduated in 1908. There he continued his activities until 1912, when he came to Chicago to accept the position of superintendent of one of the oldest and most important tool shops in the city. Of this responsible position he continued the incumbent until 1916, when he resigned the same and founded the business of which he is now proprietor and which has been built up to its present substantial volume entirely under his effective management. In the establishment of the Premier Tool Works employment is given to a force of about fifteen skilled mechanics, and Mr. Gutman maintains a most punctilious supervision of all details of the work, the while he permits no deflection from his basic policy of giving

prompt service and fully guaranteed work,—a policy whose objective appreciation is shown in the constantly increasing business.

THE WILSON-JACOBS DRUM MANUFACTURING COMPANY

Chicago claims innumerable industrial and commercial institutions that in scope and importance have precedence over all others of the kind in the world, and this prestige is legitimately to be claimed for the corporation whose title initiates this review. Without attempting to enter into multifarious details concerning the extensive and unexcelled manufacturing plant of the company, it may be said that in the manufacturing of high-grade drums of all descriptions the Wilson-Jacobs Drum Manufacturing Company is conceded to be the largest concern of the kind in the world, with a far reaching trade that justifies this international reputation. The products of the factory are sold only to the wholesale and jobbing trade and a noteworthy transaction of the company was that, in 1915, in which three thousand military drums were supplied to the entente allies prosecuting the great European war. The factory, at 218 North May street, affords sixty thousand square feet of floor space and regular employment is given to an adequate force of workmen, including a large percentage of skilled artisans. The business was founded by Tom Wilson, who is president of the Company and who is made the subject of consistent and more specific mention in following paragraphs.

TOM WILSON

The vigorous and progressive president of the Wilson-Jacobs Drum Manufacturing Company was born in Sheffield, England, on the 31st of January, 1865, and is a son of Thomas Wilson, who was in his day an expert steelworker and who was entrusted with the making of the first steel armor-plate to be placed on a British war vessel.

Tom Wilson, the fifth in a family of nine children, acquired his early education in the schools of northern England, and when thirteen years of age he began to make his own living, as an employe in the steel mills of the West Cumberland Steel Company. Here he gained broad and accurate technical experience while he was still a mere youth, and in 1886, at the age of twenty-one years, he immigrated to America, sustained by worthy ambition and determined purpose, but equipped with the most inconsequential financial resources, his mother having provided the money to pay his passage across the Atlantic, his filial devotion having been such that he had passed over to her all of his earnings to aid in the support of the family. On his arrival in New York city he encountered an old acquaintance from his home town, and as the latter was stranded and absolutely impecuneous the generous young immigrant divided his few remaining dollars with his companion from the old home. It may be said incidentally that while he was still a lad Mr. Wilson had determined to

become a citizen of the United States, and his intrinsic loyalty to the land of his adoption was manifested by his taking out his first papers of citizenship three months after his arrival in the national metropolis. From New York city he made his way to Pittsburgh, Pennsylvania, where he remained eighteen months as an employe in the engineering department of the Oliver Steel Mills. He then went to Newark, New Jersey, where he remained one year. Not satisfied with industrial conditions in the east and determined to identify himself with the progressive west, Mr. Wilson formulated plans and set forth for Seattle, Washington. He stopped in Chicago for a visit with his brother, James H. Wilson, who was at the time residing on Michigan boulevard, and the sight of Lake Michigan so forcibly reminded him of his old home in England that he became greatly impressed with this and other attractions of the western metropolis and decided to make Chicago his permanent home. For twenty years thereafter he continued in the employ of the great musical instrument corporation of Lyon & Healy, in the manufactory of which he was for several years in charge of the mechanical department. In 1907 he purchased from the company the drum-manufacturing department of the business, which at that time controlled a trade for this department not in excess of one-tenth of its present magnitude. Mr. Wilson then proceeded to organize his own independent company and for a short time the manufacturing of the drums and various musical-instrument parts was continued in the plant of the Lyon & Healy company, until the completion of the present factory, which was erected specially for the purpose and removal to which was made before the close of the year 1907. From the original status the Wilson-Jacobs Drum Manufacturing Company has developed its business until it is now the largest of the kind in the world, as previously stated, and the splendid advancement has been in large measure due to the initiative energy and progressive policies of Mr. Wilson, the president of the company.

The youthful aspirations of Mr. Wilson to become an American citizen have found fruition in his unqualified civic loyalty and public spirit, and his political allegiance is given to the Republican party. Buoyant and optimistic, generous and charitable, he has won a host of friends in business and social circles in the city of his adoption and takes the deepest interest in all things pertinent to the civic and material welfare of Chicago. In addition to being president of the Wilson-Jacobs Drum Manufacturing Company he is also a stockholder of the Williamson Gum & Glue works, at 222 West Huron street, of which he was one of the founders. In the time-honored Masonic fraternity his ancient craft affiliation is with Columbia Lodge, No. 819, Ancient Free and Accepted Masons, of which he is past master. He is affiliated also with all other bodies of the York Rite, including Siloam Commandery of Knights Templars, as well as with the Ancient Arabic Order Nobles of the Mystic Shrine. He was one of the leaders in the promotion and the erection of the fine Masonic Temple at Lawndale, and while he maintains his residence in the attractive suburb of Oak Park, he still retains a feeling of loyalty and regard for the district in which he passed so many years of his life. He is an enthusiast in outdoor sports and through the same finds his chief recreation.

On the 12th of October, 1903, was solemnized the marriage of Mr. Wilson to Miss Wyon, who was born and reared in Marshall county, Indiana, where her

Jane Wilson

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father, Jonathan Wyon is a representative farmer and influential citizen. Mr. and Mrs. Wilson have three children, whose names and respective dates of birth are here indicated: Wright W., April 11, 1895; Edna M., September 17, 1904; and Winifred G., March 30, 1906.

THE RELIABLE OIL COMPANY

In conducting a general wholesale and jobbing business as distributors of all kinds of refined petroleum products this company has the best of modern facilities at its storage and distributing plant, which is located at 418 Keystone avenue, and its relative priority in this important field of industrial enterprise in Chicago is indicated by the extensive and substantial business controlled and the representative nature of the supporting clientage, which includes leading manufacturing and railway corporations, besides which the company controls a large trade in the supplying of the "Supreme" brand of gasoline to innumerable automobile garages in Chicago and its suburbs, this distribution being effected by means of five motor trucks of large tank capacity. The company keeps constantly in stock in the storage tanks of its plant the best grades of kerosene, gasoline, naptha, etc., as well as providing the proper facilities for the storage and handling of lubricating oils and greases.

The Reliable Oil Company was organized and incorporated in January, 1913, and its Illinois charter received at that time designated its capital stock as fifteen thousand dollars. The business was founded by Edward C. Loew, who has since continued as president of the company, Robert J. Fitzgerald being its treasurer and J. J. Mathea its secretary. The company has direct supply resources of the best order, through its financial and commercial alliance with some of the largest oil producing and refining concerns of the mid-continent oil districts, and Mr. Loew devotes a portion of his time to the directing of the company's business affairs in the various oil fields of Oklahoma, Kansas and other states from which supplies are drawn for the substantial business conducted by his company. It may be noted that the company distributes in large quantities lubricants that are prepared for specific purposes, and in the list of these refined petroleum products may be mentioned cylinder oils, transmission oils and greases, oils for internal combustion engines, oils for other types of engines, machine oils, cutting oils, solid lubricants and greases, including all kinds of lubricants for gears, chains and cables.

Edward C. Loew, president of this vigorous and progressive corporation, is an active member of the Oil Manufacturers' & Dealers' Association, the Western Oil Jobbers' Association, the Independent Oil Men's Association, and the Petroleum Club of Chicago. His capitalistic and commercial interests were further amplified when he became one of the organizers of Hall Air Lock & Railway Supply Company, of which Chicago corporation he is vice-president and a director. This company was formed for the purpose of manufacturing the Corman patent air lock for railway freight cars, and this admirable device, invented and patented by William W. Corman, has met with the unequivocal approval on the part of railway authorities, and during the two years that the lock

has been on the market a number of the leading railways of the country have added the same to their equipment. The business of the Hall Air Lock & Railway Supply Company is established on a firm foundation and the success that is attending the enterprise indicates that it is destined to prove an important addition to the industrial activities of the western metropolis.

ANDERSON & GUSTAFSON.

One of the prominent and influential firms engaged in the handling of petroleum products in Chicago is that whose title initiates this paragraph, and Anderson & Gustafson have by energy and progressive policies developed a large and substantial wholesale and jobbing business, in which they handle the various petroleum products in carload lots and upon an extensive scale, their business extending into diverse sections of the Union, aside from the large business controlled in the Chicago tributary territory. The firm has the best of facilities, both through direct connection with the productive oil fields and refineries and through the ownership and operation of modern tank cars for the transportation of products. The firm handles products from the leading oil fields of Pennsylvania, Illinois, Kansas, Oklahoma, Texas and California, and a large voume of business is done each successive year, as the concern has the best of provisions for the prompt shipment to all sections of the country, through the medium of its own tank cars. The business is confined to large shipments only, in the handling of kerosene, gasoline, naptha and fuel and road oils, which products are sent forth in single tank car lots or in any desired amplication of this amount. In black oils, gas oils, red oils, pale neutrals and distillates, the firm is prepared to supply products in barrel lots, besides which a strong trade is controlled in the handling of distillates of wax and crude refined, white scale and paraffin wax. The spacious and finely appointed general offices of the firm are established on the fifteenth floor of the Transportation Building, at the corner of South Dearborn and West Harrison streets, and branch offices are maintained in the Woolworth Building, New York City; the Railway Exchange Building in St. Louis; the Finance Building in Kansas City, Missouri; and the Daniel Building at Tulsa, Oklahoma. The firm has active membership in the Chicago Association of Commerce, the Chicago Petroleum Club, the Western Oil Jobbers' Association and the Independent Oil Men's Association. The interested principles in the well known firm are John A. Anderson and Charles A. Gustafson, who established the business under the present firm title in the year of 1914.

FRANK D. CHASE

As an industrial engineer Mr. Chase has attained prestige and success in his profession and has been concerned in important work that has marked the advancement and improvement of industrial Chicago. He is the executive of a large staff of engineers, architects and efficiency engineers who are associated

to give special attention to planning and building factories, foundries, machine shops, warehouses and other industrial buildings of modern type. Mr. Chase has been engaged in business for fifteen years. The general offices are maintained in the People's Gas Building, in Chicago, with offices and engineering organizations in New York and Cleveland. The F. D. Chase service staff comprises a complete industrial engineering organization to meet the needs of Modern Industrial Plant requirements and when called into consultation with the executive officers of a manufacturing concern that is contemplating the erection of a new plant or additions to existing plants, analyses, determines and formulates plans for a well constructed plant in which many be insured the maximum output, the full utilization of all available space and the minimum or original constructive cost, with expert study on the part of the staff to determine the type of construction needed, with proper provision for future growth and expansion, the elimination of costly waste of space, as well as the preparation of complete plans and specifications that treat in detail every phase of engineering, including structural and mechanical features, heating, light, power, wirings, plumbing, sprinkler equipment, power plant, transmission, furnaces, oven, stacks and other special equipment.

Frank D. Chase is a graduate of the Massachusetts Institute of Technology, and a member of the American Society of Civil Engineers, the American Institute of Architects, the Engineers' Club, Rotary Club and Union League Club.

THE E. G. TODT COMPANY

As expert engineers and machinists this representative industrial corporation has its well equipped factory and shops at 9388 Ewing avenue, and the facilities of the institution are of the most approved type in all departments, including that given to manufacturing of cement-block machines. The company gives special attention to the repairing of stationary, turbine and marine engines and machinery and in this department of enterprise controls a large and substantial business, as does it also in the manufacturing of special rolling-mill and elevator machinery. The company's plant is thoroughly equipped with lathes, planers and presses that are capable of handling work ranging from that of minor order up to seven tons in weight. The company builds and repairs standard marine engines and in this line has developed an important trade in connection with the marine transportation on the Great Lakes.

The industrial plant of the E. G. Todt Company gives an aggregate floor space of eight thousand three hundred and sixty square feet, and in the same the average force of employes is about fifty in number. Under normal conditions the company handles about one hundred tons of heavy machine work monthly, and in this department are supplied the best of facilities for the repairing and adjusting of heavy machinery used in all manner of manufacturing establishments. All machinery in the plant is operated by electric power.

In July, 1910, Edward G. Todt, F. Oscar Weydell and David C. Lundquist effected the organization and incorporation of the E. G. Todt Company, and they have continued as the principals and executives of the company to the pres-

ent time, Mr. Todt holding the office of president, Mr. Weydell that of secretary, and Mr. Lundquist being general manager. Careful and reliable commercial policies have marked the development of the successful industrial enterprise and the concern merits definite recognition in this publication.

EDWARD G. TODT

Edward G. Todt, president of the company which bears his name and of which mention has been made in preceding paragraphs, was born at New Albany, Indiana, and was a child at the time of the family removal to Detroit, Michigan, where he acquired his early education in the public schools. Thereafter he took a special course in marine architecture at Cornell University, Ithaca, New York, and he is recognized as a technical expert and authority in this line. In 1897 Mr. Todt came to Chicago and entered the employ of the Chicago Shipbuilding Company, with which he continued his alliance until 1906, his practical experience in this connection having been of most valuable order. During the ensuing four years he held a responsible position in the employ of the Manitowoc Shipbuilding and Dry Dock Company, at Manitowoc, Wisconsin. He was superintendent of the engine department of the company's plant until 1910, when he resigned and became one of the founders of the company of which he is now president. Mr. Todt is a member of the Society of Marine Architects & Engineers and is affiliated with the Masonic fraternity.

DAVID C. LUNDQUIST

David C. Lundquist, general manager of the E. G. Todt Company, was born and reared in the city of Valparaiso, Indiana, and upon coming to Chicago, in 1890, he entered upon an apprenticeship in the works of the Inland Steel Company, his technical knowledge having later been expanded and fortified by his prosecution of a course of mechanical engineering under the able direction of Edward G. Todt. Mr. Lundquist is affiliated with the Masonic fraternity and also with the Independent Order of Odd Fellows. F. Oscar Weydell, secretary of the E. G. Todt Company, is also president of the F. O. Weydell Pattern Company.

EAST CHICAGO FOUNDRY COMPANY

Though representing one of the more recent industrial enterprises of the kind established in the Chicago metropolitan district, this company bears favorable comparison with other leading corporations engaged in the foundry business in this district,—in the large and modern industrial plant and in the scope and importance of operations. The enterprise had its inception in the early part of the year 1917, when a copartnership was formed by Harry C. Stuart and

Henry S. Evans for the purpose of conducting a general foundry and machine business. In the following July a corporate charter was granted under the provisions of the state of Indiana and with the title indicated at the initiation of this paragraph. The large and well equipped foundry plant of the company is eligibly situated at the corner of One Hundred and Forty-eighth and Railroad avenues, East Chicago, Indiana, and the same affords an aggregate floor space of thirty-one thousand square feet, the modern cupola of the institution having a capacity of forty tons and all other details of equipment being representative of the best modern standard set for this important line of productive industry. The company gives special attention to the production of gray-iron castings, and handles products of this type up to four tons in weight, the enterprise involving a general jobbing and contracting business that is confined largely to the Chicago district, and the general efficiency of service having brought to the concern a large measure of success. The plant has a private switch track that accommodates ten cars and affords direct connection with the Pennsylvania and the Baltimore & Ohio Railway systems. Vigorous and progressive policies mark the administration of the substantial business and the personnel of the executive corps of the company is as here noted: Harry C. Stuart, president; Philip S. Graves, vice-president; William F. Graver, treasurer; and Henry S. Evans, secretary. Mr. Stuart, president of the company, established himself in business as a general contractor in East Chicago in 1908, and he continued his operations along this line until 1917, when he became one of the principals in establishing the company of which he is now the executive head. He is an active and valued member of the East Chicago Chamber of Commerce. Henry S. Evans, secretary of the company, has been actively identified with the foundry business for a period of about fifteen years and his experience in the line has been varied and ample. He has been a resident of East Chicago since 1912 and is a member of the East Chicago Club. The vice-president and the treasurer of the company are executive officers also of the William Graver Tank Works, another of the important industrial concerns of East Chicago.

BROWN PORTABLE CONVEYING MACHINERY CO.

A manufacturing and distributing industry of importance is that conducted by this company, whose operations are based on ample facilities and well-ordered executive policies. The company possesses a thoroughly modern producing plant at North Chicago and has its general offices in Chicago at 10 South LaSalle street. The functions of the company may be briefly but concisely noted in the following words: "Manufacturers of, and dealers in, all kinds of materials-handling machinery," but it specializes in the design and manufacture of portable and sectional elevating, conveying, loading and unloading machinery for the economic and rapid handling of materials in packages of any size, form, or weight. In this specialty, the Brown Portable Conveying Machinery Co. figures as the originators and the only exclusive manufacturers. In thus handling commodities packed in bags, boxes, barrels, bales, etc., in industrial and commercial service, these machines reduce handling expense from fifty to seventy-five per cent.

The company makes an important point of the fact that each of its machines is "Built to Fit the Job" and designs of equipment adapted especially to the uses and local conditions of the work to which the machines are to be applied, are produced by a competent engineering department. Thus a wide adaptability is secured and while an article of the present nature precludes entering into details the following extract from a descriptive article is worthy of note:

"Portable elevators to store away in warehouses and to stack practically every class of merchandise and raw materials are a necessity because of the fact that with this machinery, valuable floor space can be utilized in a way that would be impossible with even the cheapest kind of hand labor. In the large warehouses where bale after bale is stored it costs very little to cover the floor with the first tier, which can be placed directly from the trucks, but when it becomes necessary to pile the tiers up to the roof, each additional tier increases the labor cost until it becomes finally prohibitive. Here the electrically-driven long-armed conveyor comes in and the building is filled from floor to ceiling more quickly than men, without such machinery and working as thick as bees in a hive, could do it. The Brown Portable Conveying Machinery Co., since the beginning of the great world war, has developed remarkably an already extensive export trade. From its factory have gone forth large conveyors for use in the various ports of Russia; piling machinery for the sugar mills of Cuba; machinery for unloading ships on the shores of France, and hoisting apparatus to displace the women laborers in Japan."

The Brown Portable Conveying Machinery Co. was incorporated in 1912 to take over the business of the former Brown Portable Elevator Company, an Oregon corporation that had been organized in 1904 and which, in turn, succeeded the firm of Brown Brothers, comprised of Frank H. and Fred H. Brown, two of the three Brown brothers who together invented and built the original elevating machine that formed the nucleus of the perfected mechanisms manufactured by the present company. The machine was originally manufactured by that partnership at Colfax, Washington, and later in Portland, Oregon, where a small factory was established by the Brown Portable Elevator Company. In March, 1912, the factory at North Chicago was placed in commission and in the following July the present company was incorporated under the laws of the State of Illinois and the old Oregon corporation was dissolved. The original factory was maintained at Portland, under the management of Fred H. Brown, until the autumn of 1916, when it was given up and the building of machines required for the company's extensive western business was continued in Portland by contract.

At North Chicago the factory originally built by the company was only sixty by one hundred and twenty feet in size, and in 1914 two small additions were built at one end. In 1916 began the era of expansion of the company's business, and in 1917 it was found imperative to extend the productive facilities by making two large additions to the plant, each exceeding in dimensions the then existing building. There was also erected a factory office building, this building alone being forty feet by one hundred and twenty feet in size, and in the early part of 1918 was completed and equipped still another addition for the storage of raw materials and coal and to provide for the extension of the forge department. The company's buildings now cover more than an

acre of ground, and as the site owned by the company comprises four acres, there is ample provision for the future expansion of the factory. This extra land is now being used by the company's employees as vegetable gardens. The plant has its private switch track giving direct connection with the lines of the Chicago & Northwestern and the Elgin, Joliet & Eastern Railroads. The corps of employees numbers about one hundred and fifty and includes a number of highly skilled mechanics and steel workers, expert draftsmen and mechanical engineers.

Sales of the company's specialties are made, in the United States and Canada, primarily through commission agents, while in unassigned territory sales are made direct from the main offices of the company. Foreign sales are effected principally through direct sales to agents having offices in the United States, and in some instances are made through ordinary export commission houses. This foreign trade has carried the "Brown-Portable" products to forty-three different countries. The company maintains its own sales organization on the Pacific Coast and in the City of New York. It has made good provision for the handling of its business in all foreign countries and has had its own men engaged in installation work in England, France and Russia. The machines are used in the service of the various foreign governments, by the large shipping and forwarding companies, by railroads, commission houses and other concerns that handle grain, sugar, coffee, cotton, and a thousand other commodities in packed form. Technical details of this machinery are not possible of consideration in this review but fully descriptive information is given in the different bulletins issued by the company.

The Brown Portable Conveying Machinery Co. was incorporated with a capital stock of two hundred thousand dollars, all paid in, but early in 1918 this was increased to five hundred thousand dollars, in order to meet the requirements of the company's rapidly growing business. The personnel of the executive corps consists of: Harwood Frost, president, George W. Clark, vice-president and treasurer, and Frank Hall Childs, secretary, who, with Albert T. Bacon, public accountant, and S. E. Lambert, attorney, constitute the board of directors. The company controls eight patents, covering the original construction and various details of the machines, four of these being basic patents issued to the Brown Brothers, and the others having been granted within a more recent period. The growth of the enterprise is shown in the fact that while the annual business of the company at the time the present owners took control was less than twenty-five thousand dollars, the statement for the year 1917 showed a business of close to half a million dollars. The company has membership representation in the Chicago Association of Commerce, the Illinois Manufacturers' Association, the Chamber of Commerce of the U. S., the National Hay Association, American Manufacturers' Export Association, and the National Safety Association.

It is worthy of special note that the Brown Portable Conveying Machinery Co. maintains a thoroughly organized welfare department for its employees, comprising such features as Group Insurance and a Savings and Investment Fund, and at the factory in North Chicago, maintains a well-appointed restaurant giving service at cost prices, a reading-room and other facilities for the

convenience and comfort of the employees. The policies adopted by the company in this line are proving a strong force in maintaining the morale of the corps of employees and in promoting loyalty to the interests of the company. This welfare system has been carefully developed and follows the methods being adopted by other progressive industrial corporations in Chicago and elsewhere.

HARWOOD FROST

-The subject of this sketch, Harwood Frost, president of the Brown Portable Conveying Machinery Co., was born in Smith's Falls, Ontario, Canada, in 1872, of American parents, being of the eighth generation in line of descent from one of the old Puritan families that came to this country from England early in the seventeenth century. His grandfather, after wandering about Vermont and Northern New York, crossed into Canada in 1835 in quest of a suitable business location, and from very small beginnings as a blacksmith, developed a business that has grown into one of Canada's leading agricultural implement industries.

His eldest son, the late George H. Frost, father of Harwood Frost, after receiving an elementary scientific education in Canada, came to Chicago in 1863 and took up the practice of land surveying. He became interested in railway work and located the first mile of railroad leading west from Chicago. As a railway engineer and land surveyor, he played a very active part in the upbuilding of Chicago and vicinity following the Civil War and immediately after the Great Fire of 1871. This work finally led to the establishment, in 1874, of the "Engineer and Surveyor," a small monthly, which was changed in 1876 to a weekly under the name of "Engineering News" and as such, under Mr. Frost's control and management, grew to be the largest and most influential Civil Engineering journal in the world.

Mr. Harwood Frost has been actively associated with each of these enterprises in the course of his business career and through these associations, as well as by inheritance, he became interested in engineering, from both the manufacturing and literary points of view, and his activities have led him into the practice of both and gave him the experience that made possible his present work. He received his early education in the public schools of his native Canadian town and in Plainfield, N. J., to which place his family moved in 1885, and in 1893 he was graduated from Lehigh University, South Bethlehem, Penna., with the degree of Mechanical Engineer. Soon after, he took a position with the Frost & Wood Company, the Canadian implement concern established by his grandfather in 1839. In 1895 he was awarded the degree of B. A. Sc. in Mechanical Engineering by McGill University, Montreal, Canada, through his presentation of a paper on the subject of mechanical analysis.

In 1897 Mr. Frost made his first trip to Europe, remaining there for three years, and in 1901 he represented his company with an exhibit of agricultural implements at the Glasgow Exhibition. At the close of this exhibition he opened an office in London and became European Branch Manager for the company,

Harlwood Frost

which position he held until the end of 1904, when he resigned and returned to New York to join the staff of "Engineering News," becoming Secretary of the company and taking an active part in its commercial departments, including the management of the book publishing branch of the business.

During his seven years of business life in Europe Mr. Frost learned the elements of foreign trade with the characteristic thoroughness of the British, which knowledge has served him so well in the development of his present enterprise that its volume of export business has grown to exceed its domestic, while his knowledge of the industrial and commercial geography of the world and his study of the subject of the handling of materials at terminal points have also largely contributed towards this development.

Mr. Frost resigned from the staff of "Engineering News" in 1911 with the idea in mind of taking up certain branches of engineering literature as his life work, but during a visit to Chicago in the same year he saw the operation of the small portable elevator of the old type wood construction and its economic and labor-saving possibilities as applied to the handling of materials in the storage and terminal warehouses of the world, and the opportunities it offered for development in manufacture immediately appealed to him as pointing directly to the use of the knowledge and experience he had gained by his variety of occupations and his travel and study. Accordingly, he entered into negotiation with the old company and obtained possession of the patents upon which the portable elevator was based, and at once proceeded to re-design and reconstruct the machine, first changing the fabrication from wood to steel and then developing types of construction to meet the requirements of the great variety of materials which are handled in packed form.

It seems strange to relate that at that time, in spite of the fact that there were a number of concerns manufacturing conveying machinery, not a single one of these concerns had given much consideration to the value of the portable feature of such equipment, nor had these concerns allowed their commercial vision to wander far beyond the borders of their own country. So, in the field adopted by Mr. Frost for the development of his machinery, he stood as a pioneer, and as a pioneer he wandered far afield, immediately seeking the foreign buyer, with the result that today his company is known in the uttermost parts of the earth and has established for itself an enviable reputation and good-will. Mr. Frost conceived the idea of developing a line of machines of a decidedly distinct nature; that his machines were not and could not be built and sold as a "commodity," but that the special requirements of the work and the local conditions surrounding it made each proposition a problem in itself, requiring for its best solution specially designed equipment, hence the phrase developed that ultimately became a slogan of the company, that each machine is "Built to Fit the Job."

Mr. Frost has a wide circle of acquaintances among the engineering profession of the country; he has read papers at meetings of technical societies and delivered addresses in a number of engineering colleges, and has always interested himself in the subject of technical education and in improving the standards of technical literature. He is the author of a book of a quite original nature entitled "Good Engineering Literature," having for its object the improvement

and standardization of engineering literature, and this work is largely used by college students and has guided many technical men in their writing of descriptive articles and specifications, making up of books, reports, etc. He is also the author of a semi-popular work, "The Art of Roadmaking," which is extensively used as a college text on this important subject, and which contains, incidentally, a bibliography of the subject of roadwork, covering all important publications extending back to 1583. Mr. Frost is a member of the American Society of Mechanical Engineers, Canadian Society of Civil Engineers, Society of Terminal Engineers, of which he is also a director, Society for the Promotion of Engineering Education, and is a member of the Hamilton Club of Chicago and India House of New York, a club whose membership is made up of executives of concerns engaged in international trade and commerce. He was married in Chicago in 1903, to Evelyn N. Lynas, daughter of the late Thos. R. Lynas.

In the welfare work of his company, Mr. Frost takes a lively personal interest, and in fact, the success of this department may be said to be due mainly to his individual work and efforts among his employees.

GEORGE W. CLARK

George W. Clark, Vice-President and General Manager of the Brown Portable Conveying Machinery Co., is of Quaker extraction, and was born in Philadelphia on May 24, 1882. He was educated in the public schools of Philadelphia and at the Gerard Institute of that city, and his entire business life has been devoted principally to the work of selling goods. His first occupation was as office boy, later becoming clerk, in the book publishing business of J. B. Lippincott & Co., of Philadelphia.

During the years he remained with this company as salesman, he developed a specialty of selling medical books, a work that took him to all parts of the country. In his travels in the west he became impressed with the opportunities there offered to a young man, and resigned his eastern position to take up the sale of real estate in the state of Oregon. This ultimately brought him to Portland, where he met the Brown brothers and became interested in the sale of their portable elevator.

In 1910 Mr. Clark came to Chicago in the interests of the Brown Portable Elevator Co. and later joined Mr. Harwood Frost in the reorganization of the business and the formation of the present corporation. Force of circumstances made it necessary at the commencement of the business in Chicago that the principals did all the office work and on Mr. Clark devolved the double duty of buying the raw materials and of selling the output of the factory, or, in reality, of obtaining orders for the goods before they were manufactured. It is to his marked sales ability and his resourcefulness in meeting business problems that the success of his company in a large measure must be attributed. Mr. Clark married, in 1912, Helen Cooper, daughter of Fenimore I. Cooper of Chicago, and with one son, resides in River Forest. He is a member of the Hamilton Club and the Traffic Club of Chicago.

GEORGE W. CLARK

WESTERN DRY COLOR COMPANY

At Fifty-second and Wallace streets, with frontage from 600 to 610 on West Fifty-second street, is located the modern manufacturing plant of this representative industrial corporation, the business having been established in 1903, by Rufus M. Reed, Charles D. Reed and Bryant L. Perkins, and the company was duly incorporated under the laws of Illinois. In instituting the new enterprise the company purchased property at the northwest corner of West Fifty-second and Wallace streets, and on this site erected a substantial and modern industrial building of two stories and with an aggregate floor space of five thousand square feet. Operations were initiated with a small contingent of employes,—not in excess of five in number,—and at this location the business has been continued with constantly cumulative tendencies to the present time. The original building has received additions to such extent that the plant now gives twenty-six thousand square feet of floor space, and even these ample accommodations are proving inadequate to provide for the large volume of business controlled. After the death of Mr. Perkins, in 1910, the enterprise was continued under the effective management of Rufus M. Reed until 1916, when Fred A. Beer became one of the interested principals and was made vice-president of the company, which is a close corporation.

This is the only company west of Philadelphia and New York city to give exclusive attention to the manufacturing of dry colors utilized by manufacturers of paints and printer's inks. The company is now turning out practically all of the various kinds of dry colors utilized by the paint trade, and a large percentage of the colors utilized by leading manufacturers of printers' inks who formerly depended entirely for such basic supplies upon the European manufacturers. The company is developing many new colors to duplicate these formerly imported, and in numerous instances the product is admitted to be far superior to that formerly obtained from Europe. This affords but one of many instances in which spur has been given to American inventive ability and industrial development as a result of the great European war. The company manufactures chemical colors exclusively, and much resarch and experimentation has been made in the laboratories of the concern for the purpose of bringing the products up to the highest standard. This incidental advancement of the manufacturing of dry colors in the United States has involved also the devising and development of new machinery within the period of the European war, and the Western Dry Color Company now utilizes mechanical facilities by which each man employed in the operative department can produce five times the amount of material that could have been obtained by one person under the methods and processes in vogue fifteen or less years ago. The manufacturing plant of the company is equipped with the most modern machinery and accessories in all departments, is protected from the ravages of fire by an automatic sprinkling system and has also special machinery for the gathering of dust produced in the processes of manufacturing. The products of the concern are now known and used in all parts of the United States and the annual output of the factory under normal conditions averages two million pounds a year. An adequate corps of skilled operatives is employed in the factory, and efficient traveling salesmen represent the company through its extensive trade territory. Rufus M. Reed continues as

president of the company; Fred A. Beer is vice-president and sales manager; and M. O. Caldwell is secretary.

RUFUS M. REED

Rufus M. Reed, president and one of the founders of the company described in the foregoing article, was born at Polo, Illinois, on the 19th of August, 1877. He made good use of the advantages of the public schools and thereafter took a special course in chemistry and allied sciences in the University of Chicago. As a chemist he was employed three years in the laboratory of a leading paint manufactory of Chicago, and the experience thus acquired proved an effective asset when, at the end of this period, he became one of the founders of the thriving enterprise of which he is now the executive head and the success of which has been distinctly advanced by his technical and scientific ability as well as his progressive administrative policies. Mr. Reed is affiliated with the Masonic fraternity and is a member of the Beverley Country Club.

FRED A. BEER

Fred A. Beer, Vice President of the Western Dry Color Company, to which position he was elected 1917, is a native of England born 1866 and obtained his education in the schools of his native town and at the age of twenty years entered the paint manufacturing business with which he has since been continuously connected in various executive positions with a number of the leading paint manufacturing companies of this country and has a wide personal acquaintance with the paint trade throughout the United States. He has been a resident of Chicago since 1900. Mr. Beer is a member of the Chicago Athletic Club and confines his fraternal activities to the Masonic order.

HENRY NEWGARD & COMPANY

As electrical contractors, engineers and manufacturers this corporation has gained in its special field of operations a position of marked prominence and precedence, owing to the efficiency of service and the admirable commercial ethics that have governed the business from the time of its inception,—fully thirty-five years ago. The office and factory building of the company is located at 947-955 Washington boulevard, and the plant is modern and complete in all of its facilities and appointments. All operations are supervised by experienced engineers and the business is consistently divided into three distinct departments, —The construction department, which handles all work relating to installations and wiring; the motor department, which handles all motor and generator repair work; and the switchboard department, which handles switchboards, panel boards,

cutout cabinets, Newgard receptacles, etc. In its long and commendable history this concern has handled in Chicago a great number of the large and important contracts in its line, and it is specially entitled to recognition in this industrial history of Chicago.

In 1882 Henry Newgard, a skilled locksmith and bell-hanger, laid the foundation of the business now conducted by the company of which he is president. In a basement room at 169 East Madison street (old number), the present site of the great Hotel La Salle, he established a little shop in which he continued operations until 1892. The high-grade work turned out from his shop was such that the business showed in these years a constantly expanding tendency, and he had finally found it necessary to employ four capable assistants. In 1892 removal was made to 88 LaSalle street, and at this time Mr. Newgard discontinued the locksmithing business and turned his attention entirely to electrical construction and contracting, the force of employes being increased to an average of ten men. In 1894 and again in 1899 he made removals to more ample quarters and began to give special attention to the rebuilding of electric motors and dynamos and the construction of electric switchboards and appliances, though the primary function of the enterprise was that of installing electric-light and burglar-alarm systems in offices and residences. In 1902 Mr. Newgard admitted to partnership his brother Martin, and at this juncture the well established business was incorporated under the laws of Illinois and with the present title of Henry Newgard & Company. In 1903 removal was made to 93 Fifth avenue, but within two years the quarters here occupied proved inadequate, so that an additional room was secured in the same building. This gave a floor space thirty-five by one hundred and twenty-three feet in dimensions, besides which was utilized the basement of equal dimensions and a large shop at 88 Franklin street. The new corporation here began under excellent conditions the manufacturing of the best grade of electric switchboards and fixtures, and this department of the enterprise soon grew to be one of important order.

In 1904 Henry Newgard invented the Newgard waterproof receptacle for the protection of electric-light bulbs, but he did not secure patents on this admirable device, which is now extensively used in all parts of the United States and which has the endorsement of representative fire-underwriters. Under its charter the company has the privilege of manufacturing electrical appliances and doing general construction work along the line of applied electricity. In 1905 removal was made to 225 Washington boulevard, where requisition was made for four floors, each twenty-five by one hundred and twenty-five feet in dimensions. In 1907 this building was razed and the company then obtained quarters at 38-40 West Monroe street, where operations were continued under even more auspicious conditions until it became again requisite to obtain greater space. Accordingly, in 1909, removal was made to the present quarters, at the corner of Washington boulevard and Morgan street, where the concern now utilizes fifteen thousand square feet of floor space and gives employment to an average force of eighty men. The capacity of the plant is fully tested by the demands of the now extensive business, the annual aggregate of which is in excess of four hundred thousand dollars. A branch establishment is maintained by the company at 276 West Water street, Milwaukee, Wisconsin, and the trade of the concern extends throughout various sections of the states of the middle

west. The company has membership representation in National Electrical Manufacturers' & Dealers' Association, the National Electrical Contractors' Association, the Illinois Electrical Contractors' Association and the local electrical contractors' associations of Chicago and Milwaukee. Henry Newgard has been president of the company from the time of its incorporation, Martin Newgard is vice-president, and C. E. Browne is its secretary.

HENRY NEWGARD

Henry Newgard was born in Norway, on the 10th of May, 1858, acquired his youthful education in the schools of his native land and there, in the city of Christiania, served a five years' apprenticeship to the trade of locksmith, in which he became a highly skilled artisan. In 1879, shortly after attaining to his legal majority, Mr. Newgard came to the United States and established his home in Chicago. He was first employed as a mechanic in the service of the Chicago & Northwestern Railroad, and later he entered the employ of E. T. Orne, in which connection he took up the careful study of scientific and applied electricity, so that he was ably fortified in a technical way when he established himself independently in business, in 1882, as noted in the foregoing article. He has been a vigorous, faithful and progressive business man and in the city of his adoption has achieved large and worthy success, with secure place in the respect and confidence of all who know him. He is a director of the American Electric Supply Company, holds membership in the Electric Club and the Jovian Club and has received the degrees of both the York and Scottish Rites of Masonry, in the former of which his maximum affiliation is with Illinois Commandry of Knights Templars and in the latter of which he has attained to the thirty-second degree, besides which he holds membership in Medinah Temple of the Mystic Shrine. His attractive home is at 6712 Newgard avenue, a thoroughfare which was named in his honor. He is also a member of the Mystic Athletic Club.

MARTIN NEWGARD

Martin Newgard, vice-president of the corporation of Henry Newgard & Company, was born in Norway on the 4th of November, 1864, and there he received the advantages of the excellent schools of his native place. He was about eighteen years of age when he came to America and joined his brother Henry in Chicago, in 1882, and during the long intervening years the brothers have been actively associated in business, he having been vice-presidet of Henry Newgard & Company from the time of its incorporation. Mr. Newgard holds membership in the Mystic Athletic Club, the Jovian Electric Club and the Electrical Craftsman's Club. He has been an appreciative student of the history and teachings of the time-honored Masonic fraternity, in which his affiliations are as here designated: Park Lodge, No. 843, Ancient Free & Accepted Masons; Park Chapter, No. 213, Royal Arch Masons; Adoniram Council, No. 95, Royal & Select Mas-

ters; Illinois Commandry, No. 72, Knights Templars; Aryan Grotto, No. 18, M. O. V. P. E. R.; Oriental Consistory, Sublime Princes of the Royal Secret (Thirty-second degree of the Scottish Rite); Medinah Temple of the Ancient Arabic Order of the Nobles of the Mystic Shrine; and Ben Hur Chapter, No. 401, Order of the Eastern Star.

CONROY BOILER & TANK WORKS

The substantial business developed by this concern and the notably representative character of its supporting clientage offer the best assurance of the efficiency of service that is rendered and the high-grade workmanship that marks all products of the well equipped manufacturing plant, which is located at 2213-15 West Forty-seventh street. The business was founded in 1908, by Thomas B. Conroy, who has continued its executive head to the present time and to whose technical ability, progressive policies and effective administration has been due the comulative success of the enterprise. Mr. Conroy's original manufacturing establishment was located on West Forty-fifth street, contiguous to the tracks of the Panhandle Railroad, and there, with an available floor space of somewhat less than five thousand square feet, and with a corps of twenty employes, he began the manufacturing of all kinds of plate and sheet-steel products. The business had been placed upon a very substantial footing when, at the expiration of three years, a disastrous fire destroyed the plant and entailed a financial loss of approximately twenty-five thousand dollars. Not disheartened by this serious reverse, Mr. Conroy promptly made preparations for the resumption of operations, the new plant being established, in 1911, at the present location, where was erected for the purpose a substantial industrial building forty by one hundred feet in dimensions and where the best of modern machinery and accessories were installed. Here cumulative success has attended operations since that time, and special attention is given to the production of heavy boiler and tank work for the use of the great meat packing concerns and to the manufacturing of coal bunkers, ash hoppers, general steel-plate work, and structural-iron products, the business having now extended its ramifications into far distant parts of the Union, in which connection it may be noted that within a recent period Mr. Conroy has manufactured oil refinery and storage tanks that have been placed in commission in the state of Oklahoma; rendering tanks for one of the extensive plants of Morris & Company in the state of New York; rendering tanks for the Van Iderstine Company, of Long Island, New York; rendering tanks and other equipment for the Albert Lea Packing Company, of Albert Lea, Minnesota; and packing-house equipments for the Colorado Packing Company, of Denver.

The Conroy Boiler & Tank Works has the best of facilities for the manufacturing of high-grade equipment for packing houses, rendering plants, oil refineries, etc., and the output of the factory includes metal tanks of the most approved modern type, iron smoke stacks, coal and ash hoppers, etc., in which various lines an appreciable export trade has been developed by the company. On a number of the special products patents have been obtained, and Mr. Conroy himself has invented a specially valuable device, a press for the flanging and dishing of the tops and ends of tanks this press effectively handling cold steel

plate up to one and one-half inches in thickness and giving results far superior to those obtained in the shaping of hot metal for similar purposes. In his wide and varied experience in this field of industrial enterprise Mr. Conroy has found that better results are assured through such manipulation of the cold steel, and in his factory all flange work is produced from the cold steel. The annual output of the works averages about one thousand tons and in the shops employment is given to a force varying from thirty to fifty persons, the majority of whom are skilled mechanics. The concern has membership in the Chicago Boiler Makers Association.

Thomas B. Conroy was born in Ireland, and was a child at the time of the family removal to Scotland, where he received his early education. In 1872 he came to the United States and established his residence in Chicago, where he entered the employ of the firm of Fox & Howard, contractors in bridge building and similar work. In this field of mechanical enterprise the experience of Mr. Conroy has covered operations in South American countries, Mexico, Australia, Japan and China, and he is a recognized expert and authority in the technical details of the business of which he is now a prominent and successful representative in Chicago. Mr. Conroy takes loyal interest in all things touching the welfare and progress of his adopted city, he served from 1900 to 1908 as city boiler inspector of Chicago, an office in which he gave a most careful and able administration. He holds membership in the Illinois Athletic Club and is one of Chicago's vigorous captains of industry and appreciative and public-spirited citizens.

V. MUELLER & COMPANY

In the manufacturing of surgical instruments and apparatus this company has developed a large and prosperous business, and the same is based on the well proved superiority of the many delicate mechanical products, which include anaesthesia apparatus and accessories; aspirators and accessories; laryngeal, esophageal and bronchoscopic instruments; physicians' electrical apparatus; electrically operated bone-surgery engines; orthopedic apparatus, etc. Holding a secure place of acknowledged priority in this special and important field of manufacturing, the company receives the supporting patronage of representative members of the medical profession throughout the various parts of the United States, and the admirable products of the factory are extensively used not only by leading surgeons both in this country and in foreign lands, but also in large and important hospitals of both public and private order. The company has made the best of co-operative provisions in bringing about a close touch with those who utilize its various instruments and apparatus, and has for distribution to those interested specially prepared monographs of operating rooms, Roentgen laboratories, pathological laboratories, etc., the while the correspondence department maintained in connection with the business, is prepared to offer and receive suggestions that shall prove of value in a co-operative way. Many of the new types of instruments manufactured and listed by the company have been described in current medical publications, and in most cases reprints of these original articles are kept on hand for distribution.

The manufacturing plant of V. Mueller & Company, at 1771-83 Ogden avenue, is situated in the very heart of Chicago's hospital district, and thus is in a position to give the promptest of service to more than twenty important hospitals, infirmaries, and medical institutions within this district. The company does a general retail business in surgical instruments and orthopedic appliances, in addition to its manufacturing enterprise, and from a small inception the enterprise has been developed to such broad scope as to make it one of the most important of the kind in the United States.

In the year 1898 Vinzenz Mueller, a man of high technical ability and special floor space of about one thousand square feet and the original corps of emmechanical skill, began on a modest scale the manufacturing of high grade surgical instruments, his factory at 1779 Ogden Avenue, having had an aggregate ployees having numbered only three persons. The excellence of the products turned out under his personal and punctillious supervision, gained to the new enterprise a representative patronage and assured its continuous and cumulative success. In August, 1900, expediency led Mr. Mueller to incorporate the business, under the present title of V. Mueller & Company, and he became president of the new corporation, a position of which he has since continued the incumbent, his wife, Florence Mueller, having been vice-president since the time of incorporation, but the original secretary, Charles Storz, having been succeeded by the present incumbent, George W. Wallerich. Continuing operations at the original location, the company has since found it necessary to increase both the factory accommodations and the salesrooms; the establishment at the present time having in requisition eighteen thousand square feet of floor space and employment being given to an average force of fifty persons, the greater number of whom are highly skilled mechanics.

Up to the time of incorporation the business of the concern had been entirely local in its ramifications, but soon afterward a few traveling representatives were retained to exploit the output of the factory outside of the local field. By 1912 the trade extraneous to the Chicago territory had attained such large volume that it was found unnecessary to continue the employment of traveling salesmen, and since that year the company has exercised its functions exclusively through the medium of mail orders, the best of descriptive literature supplementing the effective work of the correspondence department and the business being conducted in a direct way with surgeons, hospitals and laboratories.

In addition to controlling a representative business in the various parts of the United States, a substantial trade has been developed by the company in the Canadian provinces and in South American and Oriental countries.

V. Mueller & Company pay special attention to the manufacturing of delicate instruments used by eye, ear, nose and throat specialists, and by reason of having direct dealings with surgeons, hospitals and laboratories the company has been able to bring out numerous special instruments of exceptional value, the devising and manufacturing of the same having in many instances been in consonance with suggestions by prominent members of the medical profession, and some of these special instruments and accessories being fully protected by patents controlled by the company. To a large extent the manufacturing in the Chicago institution represents the best type of hand work, and thus men of the highest technical skill are employed by the company.

VINZENZ MUELLER

Vinzenz Mueller, the founder and president of V. Mueller & Company, was born and reared in Germany, where he received a thorough training in his chosen trade. Later he spent some years in England, where he gained further practical knowledge of the surgical instrument business. In 1894 Mr. Mueller came to the United States and established his residence in Chicago, where he has been consecutively identified with the manufacturing of fine surgical instruments. In this important field of enterprise, he is a recognized expert and authority, and his inventive genius has given to the medical profession many highly improved surgical instruments and accessories. He is technical editor of the department of "New Instruments and Appliances" in the periodical known as "The Modern Hospital" and he was also associated with George W. Wallerich, secretary of V. Mueller & Company, in founding the American Surgical Trade Journal, which they turned over later to the control of the association designated, this transfer having taken place in 1915, and their continued and vital interest in the publication is being shown in their frequent contributions to its columns. Mr. Mueller is one of the active members of the American Medical Trade Association and the American Hospital Association, and a member of the Illinois Club.

GEORGE W. WALLERICH

George W. Wallerich, secretary of V. Mueller & Company, a corporation of which description has been given in a preceding review, was born at Sigourney, Keokuk county, Iowa, and his early educational discipline was obtained in the public schools of the city of Des Moines, that state. In that city he initiated his active business career and became identified with the dental supply trade. From 1902 until 1910 he gave close attention to the developing and improving of scientific X-ray apparatus, and his technical contribution to this important line has been significant and valuable. He has been secretary of V. Mueller & Company since 1910, his technical skill having been potent in furthering the advancement of the business with which he is thus identified. He is assistant technical editor of "The Modern Hospital," a monthly publication; is President of the American Surgical Trade Association, and has membership also in the American Hospital Association. He maintains his home in the attractive suburb of Oak Park and is there a member of the Colonial Club.

THE KEHM, FIETSCH & MILLER COMPANY

This corporation represents in its facilities and operations one of the largest and most important printing and manufacturing concerns in its special field that is to be found in Chicago, and in the manufacturing of color labels and folding paper boxes is one of the leading concerns of the country. It is another Chicago institution that has been developed from small beginnings to one of

Herman Friesch Jr.

broad scope and importance, and much of this advancement has been due to the present executive head of the company, Herman Fietsch, Jr., concerning whom more special mention is to be made in later paragraphs. The business was established in the year of 1888 and the original firm of Chapman & Wilson, which conducted a comparatively small printing establishment on Fifth Avenue was succeeded by that of The Kehm, Fietsch & Wilson Co., of which the president of the existing company was one of the organizers, his associates having been Henry Kehm, Frederick Miller and Joseph Wilson. The original quarters of the firm of Kehm, Fietsch & Wilson were at the corner of Clark and Lake streets, and in 1890 the present Kehm, Fietsch & Miller Company was incorporated under the laws of the state and succeeded to the well established business. From the original location removal was made to larger quarters, at the corner of Van Buren and Clinton streets, and five years later to make adequate provisions for its large and constantly expanding business, the company purchased the seven-story brick building now occupied, at 430 West Erie street, where was given an aggregate floor space of thirty-five thousand square feet. Even these accommodations proved inadequate eventually, and five years after the company erected an addition to the original building and of the same height and dimensions of the latter, so that the floor space was exactly doubled. Every part of the extensive building is demanded for the uses of the company which gives employment to an average force of about two hundred persons. The mechanical equipment and other facilities of the plant have been kept up to the highest standard and much executive ability has been shown by the interested principals in handling the large volume of business now controlled by the company. The other officers of the company are as here noted: Herman Fietsch, Jr., president; Frederick H. Miller, secretary and treasurer.

HERMAN FIETSCH, Jr.

The president of the corporation whose history has been briefly outlined in the foregoing paragraphs, was born in Chicago, on the 2d of December, 1857, and in his independent business career he has fully exemplified the energy, self-reliance and progressiveness that so significantly have marked his native city. Through his own ability and effort he has achieved substantial success and placed himself among the representative business men of the western metropolis. He is a son of Herman and Christiana (Stagen) Fietsch, both of whom were born in Germany and the names of whom constantly merit place on the roll of the sterling pioneers of Chicago. Herman Fietsch, Sr., was born and reared in the Kingdom of Saxony, Germany, and was a youth of eighteen years when he came to the United States and established his residence in New York city. Three years later, in 1850, he came to Chicago, which was then a city with but few metropolitan pretensions, and here he was for many years engaged in the work of his trade, that of cabinet maker, though in later years he was engaged in the mercantile business on a modest scale. He served as health officer of Chicago for a period of fifteen years, under the regime of various mayors, including the senior Carter H. Harrison. He was one of the venerable and honored pioneer

citizens of Chicago at the time of his death, on the 15th of May, 1917, his wife having preceded him to eternal rest.

Herman Fietsch, Jr., the immediate subject of this review, acquired his early education in the public schools of Chicago, besides which he learned in his boyhood the lesson of practical industry. At the age of fourteen years he earned his first dollar, through service as cash boy in the store of Field & Leiter. After thus working two weeks he resumed his school attendance, but a year later he entered upon an apprenticeship in the printing establishment of Jameson & Morse, with which firm he remained eighteen years. He began his service in the dignified capacity of "printer's devil," learned thoroughly all details of the "art preservative of all art," and as a practical printer and resourceful executive he finally became foreman of press room. After several years he became associated with the firm of Chapman & Wilson, and from that alliance he made advancement to his present status as head of The Kehm, Fietsch & Miller Co. In initiating his independent business career his capitalistic resources were limited to the savings he had made from his earnings, and at the beginning he and his partners, with the assistance of three employes, carried on the business in all departments. Of the final result of his earnest and well ordered endeavors adequate record has been made in the preceding article.

Mr. Fietsch is a life member of the Illinois Athletic Association, and in the Masonic fraternity his ultimate York Rite affiliation is with Apollo Commandery of Knights Templars, the while he has received also the thirty-second degree of the Scottish Rite and is also affiliated with the Medinah Temple of the Mystic Shrine. He is an enthusiast in the baseball and other outdoor sports and finds through the medium of the same his chief recreation.

On the 2d of December, 1881, was recorded the marriage of Mr. Fietsch to Miss Christiana Charleston, who likewise was born and reared in Chicago, and of the five children of this union four are still living, Herman, Jr.; Alma, who is the wife of Harold O. Cady, of Chicago, Marguerite and Franklin Wixon, who remain at the parental home. Mabel died at the age of seventeen years. The pleasant family home is at 342 Home avenue, Oak Park.

SOUTH CHICAGO PATTERN WORKS

Under the above title is conducted a substantial and well ordered enterprise that proves an important accessory of the great industrial activities of the Chicago manufacturing field, and the well equipped plant of the company, with the most approved of modern facilities, is established at 10022-24 avenue N, in the celebrated industrial district known as South Chicago.

The business of the South Chicago Pattern Works was founded in 1909, by Alois Perz, who initiated his enterprise in an individual way and upon a very modest scale. His little shop was opened in a building at the corner of Ninety-first and Baltimore streets, South Chicago, where he made requisition for four hundred square feet of floor space and at the start gave employment to only two persons. Himself a skilled patternmaker, he here engaged in the general pattern-making business, and his ability and excellent reputation brought success to the

new venture. Within the first year he found it necessary to increase the amount of floor space in his establishment and finally the substantial expansion of the business justified him in proving for the erection of the present modern and model plant. In 1916 he purchased seven thousand two hundred and fifty square feet of ground at 10222-24 avenue N, where he erected a substantial and modern industrial building, of mill construction, the same having been designed specially for the purpose to which it is applied. In this building he installed the best of machinery and other facilities for the manufacturing of patterns, and provisions are such that here may be produced patterns sixteen feet in diameter and fifty-five feet in length, besides which handwork patterns are here produced from those of the smallest size to the largest. Special attention is given to the production of marine-machinery patterns of all descriptions and to the making of patterns for steel plants, as well as those for steam and gas engine and turbine work. Mr. Perz has continued as virtually the sole owner of the substantial business which he has developed and in connection with which he now gives employment to an average force of about ten assistants.

ALOIS PERZ

Alois Perz was born in Gottschee, Austria, where he was reared and educated, and in his native land he served a thorough apprenticeship to the trade of pattern-making, in which he became a specially skilled workman. He continued to follow the work of his trade in Austria until 1890, when he came to the United States, and in the following year he established his residence in Chicago, where he found employment as a patternmaker in the extensive industrial plant of the Frazier & Chalmers Company. He continued successfully in the work of his trade until 1909, when he founded his present independent business enterprise in this line, as noted in the preceding article. Mr. Perz has entered fully into the spirit of American customs and institutions and his civic loyalty is shown in the staunch support which he accords to the cause of the republican party. He is affiliated with the Masonic fraternity and the Knights of the Maccabees, and he has provided as the family home a most attractive and modern residence at 10310 Ewing avenue, South Chicago.

MARQUETTE ELECTRIC ENGINEERING COMPANY

In no other one field of industrialism has there been in this twentieth century so marvelous and significant an advancement as in that of applied electricity, and through the same has been given impetus to all manner of important industrial and commercial enterprises. Chicago has not failed to hold a position of priority in this domain of industrial productiveness and to the city's prestige in this respect the Marquette Electric Engineer Company is making definite and noteworthy contribution.

This company was organized in the year 1915, and on the 1st of May of that

year it was incorporated under the laws of Illinois, its charter designating its primary function as being the manufacturing of electrical specialties, including electric power switchboard for both direct and alternating currents, electric-light switchboards and panels, and the designing and manufacturing of special high-tension switchboards for all uses, the while provision was made also for the company's interposition for service as expert consulting engineers in connection with electrical industry. The original corps of executive officers has remained unchanged from the time of incorporation and is as here noted: Harold B. Harvey, president; Paul Aquestinus, vice-president; and Samuel A. Hohman, secretary. The manufacturing plant of the company, at 212-16 West Austin avenue, is equipped throughout according to the best modern standard, and its facilities in every department are unexcelled. Special attention is given to the manufacturing of telegraph switchboards and allied control appliances, and to the producing of special switchboards manufactured according to the plans and specifications of consulting engineers. For emergency purposes the company keeps constantly in stock a large assemblage of slate, copper, Busbar, wire and switch parts, together with instruments and accessories that may be demanded by its trade. All products bear the name of the company as a definite trademark and the business has been extended into the most diverse sections of the United States, the while an appreciable foreign business has been developed also. The officers of the company hold membership in the American Association of Electrical Engineers, and Chicago Association of Commerce.

The motor department of the business of this progressive corporation is maintained as a distinct and virtually independent division, and is given over primarily to the repairing, rebuilding and redesigning of large types of electric motors, in addition to the construction of special electrical appliances of broadly diversified order. At the time of this writing the company is engaged in developing an improved type of electric-generator sets that are destined to be used for government work incidental to the nation's participation in the great European war.

HAROLD B. HARVEY

Harold B. Harvey, president and one of the founders of the company described in the foregoing context, was born and reared in the city of Boston, Massachusetts, and after excellent educational discipline of a preliminary order he entered the celebrated Massachusetts Institute of Technology, in which he completed a thorough course in electrical engineering. Skilled in the scientific and practical work of his chosen profession, he thereafter continued to follow the same in connection with various representative concerns until he became, in 1915, associated in the organization and incorporation of the company of which he is now the executive head. He is one of the vital and progressive young business men of Chicago, in which city he has maintained his residence since 1906, and he is an active member of the Chicago Rotary Club, the Mystic Athletic Club and the Technology Club. In the Masonic fraternity he has received the thirty-second degree of the Ancient Accepted Scottish Rite, as well as those of the Mystic Shrine, and he is affiliated also with the Knights of Pythias.

PAUL AQUESTINUS

Paul Aquestinus, vice-president of the Marquette Electric Engineering Company, was born in Chicago, in the year 1897, and after having profited duly by the advantages of the public schools of his native city he was matriculated in the University of Illinois, in which he was graduated as member of the class of 1906, after the completing of the prescribed course in electrical engineering. Thereafter he was employed for some time by the Westinghouse Electric Company, and after severing this association he was employed in expert technical service for the Western Electric Company until he became associated in the organization of the company of which he is now the vice-president. He is one of the alert and popular business men of the younger generation in his native city and is making an admirable record as an expert in his profession as well as a successful manufacturer. He is an active member of the American Association of Electrical Engineers.

AMERICAN SAW & TOOL WORKS

One of the important and well ordered industrial corporations of Chicago is that whose title initiates this paragraph and whose large and well equipped manufacturing plant is situated at West Fourteenth street and Western avenue, with office address at 2431 West Fourteenth street. The company controls a large and substantial business in the manufacturing of circular wood-saws, band saws, butchers' saws and machine knives, circular saws for cutting iron and steel, machine knives for all purposes, melting ladles, plumbers' and ice tools and a wide and varied line of incidental tools and appliances.

The business of the American Saw & Tool Works was founded in the early '80s, by C. A. Hiles, who began operations in the manufacturing of a limited line of tools and mechanical accessories of other types. After a period of years Mr. Hiles retired from active association with the enterprise, in which his sons had become interested, under the title of C. A. Hiles & Company. After the retirement of the founder of the business his sons added to the industry such extra and heavier lines of manufacture as to more than test their facilities and financial reinforcement, and under these conditions the Hiles interests were transferred to the principal stockholder in the business, and in February, 1913, under the well ordered adjustment that was effected for the prosecution of the business upon a broader scale, the American Saw & Tool Works was incorporated under the laws of Illinois and with following named executive corps: William Fries, president; George O. Gunderson, vice-president; and Seward M. Gunderson, secretary. The new company's charter made provision for its province of operations to include the manufacturing of saws, knives and tools for iron and wood working operations, and at the present time one of the most important features of production is that involved in the manufacturing of friction discs that are used in the cutting of cold-cutting of structural angle-iron, rails, etc., at high speed, and also hot-saws that are utilized for a similar purpose but which are applied to the hot metal as it comes from the rolls. The company also manufactures a complete line of ice-harvesting and ice-handling tools and appliances,

including ice plows of various types and sizes, ice elevators and conveyors and all other needed tools and appliances for the handling of ice in large or small quantities. In the department devoted to the production of tools and appliances for the use of plumbers a specialty is made of the manufacturing of a highly improved type of lead-melting furnaces, from those of minor capacity up to those with a capacity for six hundred pounds of lead. In this department of the enterprise provision is made also for the manufacturing of a complete assortment of the tools demanded by plumbers. For wood-working the company manufactures the best grade of circular and band saws and appliances therefor, as well as hand saws of varied types, machine knives, and saws used in connection with metal industries. The catalogues of the concern will give to the trade all requisite information and it is not consonant with the province of this publication to attempt to enter into manifold details thus covered.

The manufacturing plant of the American Saw & Tool Works affords an aggregate floor space of nearly twenty thousand square feet and the force of employes averages about thirty-five operatives, the efficiency of the organization being shown conclusively in the adopting of machinery that reduces the necessity for a large force of mechanics and that insures larger and more effective production, the facilities of the plant being such that from all departments orders can be filled expeditiously and satisfactorily at all times. The trade of the company extends into the different sections of the United States and also into the Canadian provinces, and superiority of products combined with efficiency of service gives to the company an inviolable commercial standing and reputation. The business is handled directly with manufacturers and jobbers and the company has membership representation in the Illinois Manufacturers' Association.

WILLIAM FRIES

William Fries, president of the industrial corporation mentioned in the foregoing article, has gained secure vantage-place as a successful exponent of industrial enterprise in his native city, his birth having occurred in Chicago on the 26th of October, 1861, and his early educational advantages having been those of the public schools. His initial business experience was acquired when he was a lad of twelve years, and after leaving school he made his way forward and broadened his knowledge through wide and varied experience in public accounting work and in connection with the real-estate business. In 1907 he became identified with the industrial enterprise of which he is now the executive head, and in 1910 he assumed full management of the business, which continued to be conducted as virtually a partnership enterprise until 1913, when it was incorporated under the present title, and he has since continued as the efficient and progressive president of the American Saw & Tool Works. Mr. Fries is an independent in politics and is affiliated with the Masonic fraternity, including the Knights Templars and the Mystic Shrine. Of the other officers of the company it may be stated that George O. Gunderson is general manager of the Acme Steel Company, and that Seward M. Gunderson is one of the principals of the representative Chicago firm of S. T. Gunderson & Sons, which has been one of the foremost in real-estate operations and home building in this city.

AMERICAN FINISHING COMPANY

Under this title is conducted a unique and well ordered business enterprise that was founded in 1896, by Eustace S. DeLeon, who has been in sole control of the business during the intervening years and to whose progressiveness, technical ability and well ordered policies has been due the upbuilding of a very prosperous enterprise that is one of a very limited number of the kind in the United States. The company reveals its specific functions as being those of "finishers to the lithographers' and printers' trades, and more detailed information is given in stating that the finely equipped factory has the best of facilities for the varnishing and gumming of paper, for strip gumming in sheets, for roughing and stippling, for perforating, for tin mounting and tin binding, for die cutting, and water-proofing of paper products, for the gathering of calendars and similar products, and for punching and stringing of the same, besides which the concern keeps in stock folded-tin and brass hangers for the accommodation of its trade. The manufacturing plant and offices occupy a building extending from 540 to 542 West Harrison street and from 526 to 534 South Clinton street. In a generic way the company does a general line of finishing work for printers and lithographers in the varnishing, gumming, die-cutting and tin or brass mounting of printed or lithographed products, which are thus made ready for delivery to the customers of the lithographing and printing concerns. Facilities are provided also for the gumming and varnishing of paper stock for subsequent printing or lithographic use. Careful research and experimentation has enabled Mr. DeLeon to devise a process of gumming that is proof against disintegration, sticking or impairment under the conditions to which such paper products are normally exposed. All gums and varnishes used in the factory are made in accordance with the special formulas devised by Mr. DeLeon, and he has been successful in developing a system of applying such gums and varnishes in such a way that the product is not impaired by climatic conditions or handling. Through this process can be given a superior finish for glazed paper utilized in book work, as paper thus treated will not readily show thumb marks and is not impaired by washing with soap and water. This special varnish as applied to the wrapping of food containers meets all requirements of the national pure food laws.

Through his business experience Mr. DeLeon became impressed with the idea that in his present field of enterprise was offered excellent opportunity for the developing of a business that would relieve and supplement the functions of general printing and lithographing establishments, most of which looked upon the gumming and varnishing of paper as really extraneous to the normal line of production. The encouragement which he received in presenting his idea to representative printers and lithographers resulted in Mr. DeLeon's establishing the American Finishing Company, which now handles work of this class for leading printing and lithographing establishments from New York city to San Francisco. Mr. DeLeon may consistently be termed a pioneer in this interesting field of industrial enterprise and the success that has attended his efforts has fully justified his wisdom in establishing his independent enterprise. His original factory was established on South Green street, and since that time two removals have been made on account of fire causing the total destruction of the

plant and equipment, though with loss averted through adequate insurance indemnity, and one removal to gain larger accommodation. In 1905 the factory was established at its present location, where is utilized a floor space of five thousand square feet and where the force of employes averages about twelve persons. The annual business of the company involves the handling of from twelve to fifteen tons of paper products, and in the entire Union there are not to be found more than twelve other institutions of similar functions.

Eustace S. DeLeon is a scion of a fine old Spanish family early founded in New Orleans, Louisiana, and in that beautiful and historic old city he was born on the 27th of June, 1869. There he received his early education in the public schools and there he learned the lithographing trade in the establishment of the Southern Lithographing Company. In 1886 he came to Chicago and here he continued to be employed as an expert at his trade until he established his present thriving and important business, which he conducts under the non-corporate title of the American Finishing Company.

Mr. DeLeon has had no desire to enter the arena of practical politics or to seek public office, but he takes loyal interest in all that touches the civic and material well-being of his home city and is a public-spirited citizen as well as a successful business man.

KELLOGG SWITCHBOARD AND SUPPLY COMPANY, ENGINEERS AND MANUFACTURERS OF COMPLETE TELEPHONE SYSTEMS —OVER TWO MILLION TELEPHONES IN USE TODAY

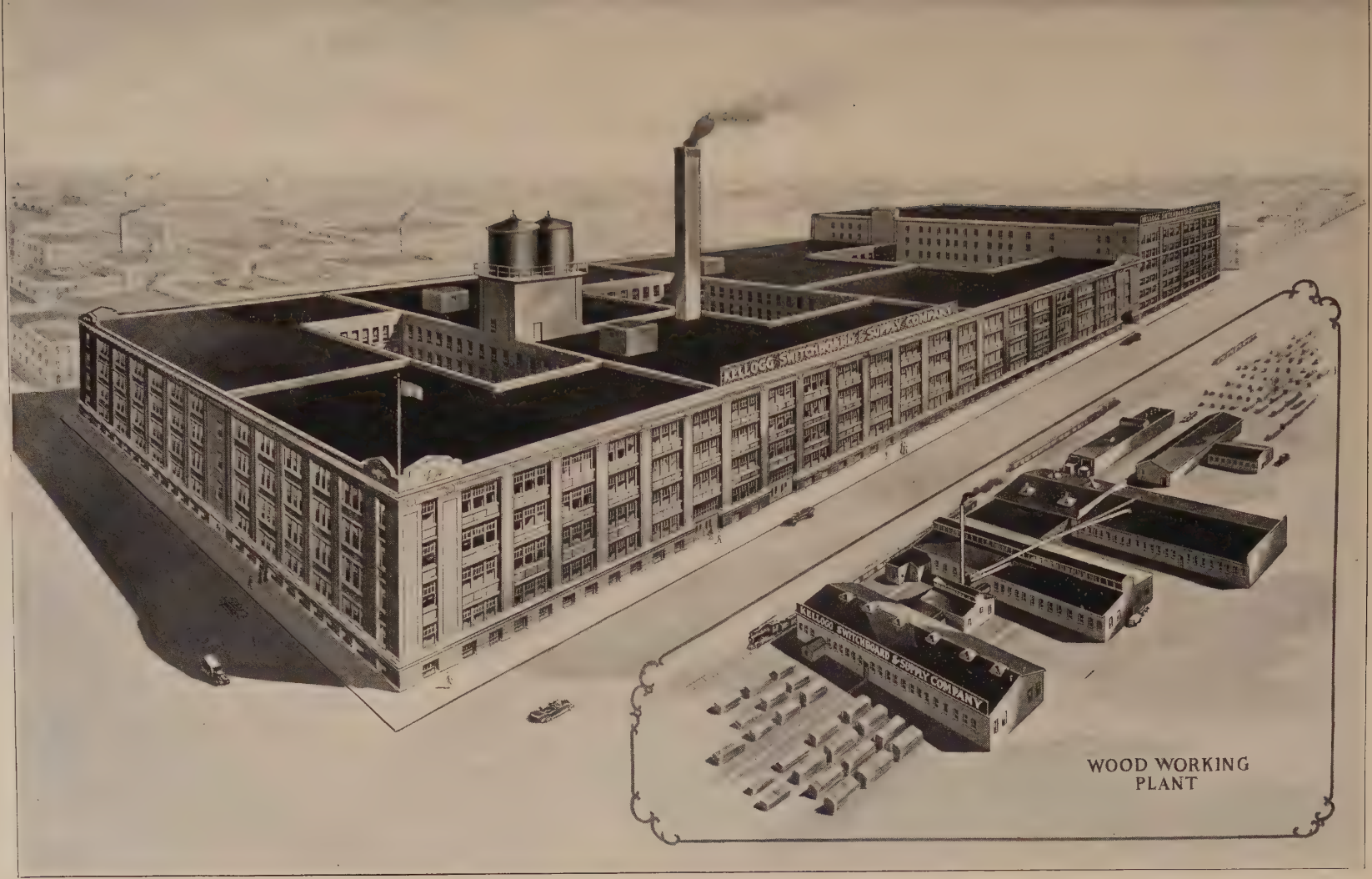
Out of a small factory, in 1897, came a switchboard and some telephones for the city of St. Louis, Mo. Upon these was the nameplate "KELLOGG," and this name and these telephones and this switchboard, and all the telephones and switchboards that came after them, have, it is a matter of history, revolutionized the telephone industry. They were the first Independent telephones and switchboards, and have helped all telephone men to a knowledge of better apparatus. It was the Kellogg Company, for instance, who originated and made available economical party line systems for the small town telephone users, as well as the metropolitan. It was the Kellogg Company that, eighteen years ago, produced the Kellogg transmitter through which today, practically without change, millions of people are talking. Records show over two millions in service.

It was the Kellogg Company that helped the Independent operator by giving him good apparatus, that did not change with every passing season. It was the Kellogg Company that led the way with reliable and durable apparatus—telephones and switchboards that would hold up under the hardest service. They accomplished this by producing a line of telephone apparatus never equaled in this or any other country.

The Kellogg Company is the only Independent Telephone Manufacturing Company that manufactures all of the parts and apparatus entering into switchboards and telephones, such as cords, cable, signal lamps, bakelite, enamel wire, etc., in their own plant and under their own inspection.

The reliability and worth of the Kellogg magneto wall sets have meant

J. B. Edwards



KELLOGG SWITCHBOARD & SUPPLY COMPANY

the success of thousands of farm line exchanges. And not only in small towns and country villages, but in the largest cities, at home and in 32 foreign countries, we find the Kellogg switchboard and Kellogg telephone giving the very best service it is possible to get anywhere; giving a service which, in point of economy, maintenance saving, reliability and money saving, is surpassed by none.

Sao Paulo, Brazil; Rio de Janeiro, Brazil; Quito, Ecuador; Kingston, Jamaica; Cleveland, Ohio; Philadelphia, Pennsylvania; St. Louis, Missouri; Columbus, Ohio; La Crosse, Wisconsin; Johnstown, Pennsylvania, with hundreds of other cities and towns, boast of Kellogg exchanges, which, in their successful operation and their splendid service, acknowledge the value of Kellogg equipment. These exchanges, it is a matter of record and engineering knowledge, actually give better service than is given by any of their competitors.

Combination features of secret service, of automatic ringing and reliable answering, which contribute so much toward successful operating, are not obtainable with other makes of apparatus on the market today.

The first Kellog magneto board with its now famous parts; its combined drops and jacks, and its keys, is still in operation. And so, today, are thousands and thousands of magneto switchboards of all sizes and capacities, giving superlative service in towns from the Atlantic to the Pacific. Not only in towns, but in villages, and in the smallest hamlets, you will find Kellogg switchboards giving an excellent account of themselves. And not only in this country, but abroad, has the record of Kellogg apparatus blazed its way. Everywhere that it is used, it is known as standard.

For twenty years now it has been made regularly by the same people. The Kellogg factories have 584,000 square feet of floor space, over 13 acres. Their production has been uninterrupted and reliable, for the operating man. It has meant that the small telephone managers could be sure of obtaining renewal parts at any and all times, promptly, and it has always meant that what he bought of Kellogg manufacture was built primarily to give him the service the public demands.

The Kellogg Telephone Manufacturing Plant in Chicago is in itself an evidence of the worth of apparatus with the "KELLOGG" nameplate.

If you are a telephone man and are interested in new equipment for any size or type of exchange, write us today.

On every Kellogg advertisement appear the words "USE IS THE TEST." Kellogg users believe in it.

The officers of the Kellogg Company are: J. B. Edwards, President and General Manager. L. D. Kellogg, Vice President. J. G. Kellogg, Vice President. Seymour Guthrie, Secretary and Treasurer.

THE AMERICAN TAG COMPANY

With a factory of large capacity and the best of equipment, this company had developed an extensive industrial enterprise in the manufacturing of shipping tags, marking tags, railroad baggage-checks and various other paper goods, the products of the factory being sold to consumers in a direct way, and the com-

pany having large contracts for the supplying of representative railway corporations and important manufacturing and commercial concerns, the trade being extended into the various sections of the United States. The Chicago factory, at 6133-6153 South State street, gives an aggregate floor space of fifty thousand square feet and here the company retains a force of more than two hundred employes. Sales agencies are maintained by the company in all of the principal cities of the Union.

The now large and important business controlled by the American Tag Company was established in Chicago in 1897, by Arthur H. Swett, who has been president of the company from the time of its incorporation, and the other executive principals are William A. Ward, who is vice-president, and James E. MacMurray, who is secretary and treasurer. The factory in Chicago was established at Seventeenth and South Clark streets, where was utilized a floor space of five thousand square feet, the original corps of employes having been about fifteen in number. The business has had a healthful and steady growth and the output capacity of the factory in Chicago at the present time is more than two million tags daily.

ARTHUR H. SWETT

Arthur H. Swett, president of the American Tag Company, was born at Worcester, Massachusetts, on the 22nd of November, 1868, and was a boy at the time of the family removal to Chicago, where he profited duly by the advantages of the public schools, including the high school, besides having taken an effective course in the Cook County Normal School. His early business experience was gained in connection with the wholesale paper business and in the manufacturing of paper. From 1893 to 1897 he was engaged in the manufacturing of specialties for commercial use, and in the latter year he organized the company of which he is now president, his well ordered and progressive policies having been potent in the upbuilding of the substantial business now controlled by the American Tag Company. He is a member of the Chicago Athletic Association, Illinois Manufacturers Association, Chicago Association of Commerce.

WILLIAM A. WARD

William A. Ward, vice-president of the company, was born in Arena, Wisconsin, on the 31st of March, 1861, and after having profited by the advantages of the public schools he entered Beloit College, one of the representative educational institutions of his native state, his studies having there been continued three years. As a young man he gave efficient service as a freight solicitor for the Chicago, Milwaukee & St. Paul Railroad, and later he was similarly engaged with the Chicago & Northwestern Railroad Company, by which he was later advanced to the office of freight auditor. For a time he was engaged in the real-estate brokerage business in Chicago, and since 1897 he has been actively identified with the direction and management of the American Tag Company, of which he has

been vice-president and sales manager from the time of its incorporation. He is affiliated with the Masonic fraternity and was one of the charter members of the Illinois Athletic Club.

JAMES E. MacMURRAY

James E. MacMurray has been secretary and treasurer of the American Tag Company since 1898, is also president of the Acme Steel Goods Company, besides having other large and important capitalistic interests. Mr. MacMurray was born in Knox county, Missouri, August 7, 1862, a son of Fletcher and Miranda (Green) MacMurray. His early education was obtained in the district schools of his native county and later he attended Chaddock College, at Quincy, Illinois, in which he was graduated in both the literary and law departments. He was admitted to the bar in 1884 and thereafter was engaged in the practice of his profession until 1890, when he became actively identified with a leading manufacturing enterprise at Quincy, Illinois. Since that year he has been president of the Acme Steel Goods Company, the manufactory of which was removed from Quincy to Chicago in 1899. He holds membership in the Chicago Athletic Association, the Union League and the Hamilton Clubs.

A. D. SHOUP COMPANY

One of the representative corporations engaged in the manufacturing of paper boxes in Chicago is that whose title is noted above, and the business controlled has grown to be one of wide scope and substantial order, as indicated by the fact that in addition to the large and thoroughly equipped factory in Chicago, at 1545-51 West Thirty-fifth street, the company has also factories of large capacity in Brooklyn, New York, and Toronto, Canada. The concern is one of the most important of its kind in the Union and its trade extends into the most diverse sections of the United States and Canada.

The A. D. Shoup Company was organized and incorporated in 1903, under the laws of Illinois and with the following named officers: A. D. Shoup, president, and R. C. Shoup, secretary. The original factory was established in a building at the corner of Lake and Peoria streets, where requisition was made for a floor space of about ten thousand square feet, the number of employes being about thirty and the output capacity of the plant being about three hundred thousand paper boxes monthly. In this early period of its operations the company's trade was confined almost entirely to Chicago, and high-grade products, careful and honorable commercial policies and utmost efficiency of service are the elements that have conserved the splendid growth of the business within the intervening years. In 1911, in order to obtain larger factory accommodations, removal of the plant was made to 426 South Clinton street, and it was at this juncture also that the branch factory was established in Brooklyn, New York,—at 34 to 68 Thirty-fourth street, this factory now giving employment to one hundred and

seventy-five persons and being under the able management of Stephen Peteley. In 1913 the company placed in operation its branch factory in the city of Toronto, Canada, the same being located at 245 Carlaw avenue and giving employment to a force of one hundred and fifty persons, F. B. Smith being the superintendent of the plant and business. The building here occupied by the company is conceded to be one of the most modern and attractive industrial buildings in Canada, with an aggregate floor space of forty-three thousand square feet and with switch track that accommodates five cars simultaneously, so that shipping facilities are of the best.

In May, 1916, the Chicago factory of the company was removed from South Clinton street to its present excellent location, where is utilized a modern six-story building that makes available ninety-five thousand square feet of floor space,—accommodations fully demanded for the manufacturing departments and for the storage of stock. The company gives special attention to the manufacturing of high-grade and artistic boxes for chewing-gum and candy, but an endless variety of boxes utilized for other commercial purposes likewise represents an important part of the annual output from the three factories. In the spring of 1917 the company opened a fourth factory, in the city of Melbourne, Australia, and in that far country there is every indication that the concern will be able to develop a large and prosperous business within the next few years. The Chicago factory now shows an average force of more than 300 employes, not including office assistants, and this and the other two American plants are operated to full capacity, the export trade to England and France being handled from the Brooklyn plant. The expansion of business at the Chicago headquarters led to an appreciable addition to the local manufactory in the summer of 1917 and this change gives supplemental floor space of about twenty thousand square feet. This factory has capacity for the turning out of two hundred thousand boxes daily. The company has membership representation in the Chicago Association of Commerce and the Illinois Manufacturers' Association, A. D. Shoup continuing as president of the corporation and N. G. Behles being its secretary.

A. D. SHOUP

A. D. Shoup, president of the company above described, was born in Columbus, Ohio, on the 23d of September, 1870, and his early educational discipline was acquired in the public schools of the Buckeye state. He was about fifteen years old at the time of the family removal to Chicago, in 1885, and here he continued his studies until he had completed the curriculum of the public schools. In 1890 he obtained a position in the paper-box factory of the I. L. Henry Company, and here he learned thoroughly all details of this line of enterprise, so that he was splendidly fortified when, in 1903, he founded the independent commercial enterprise of which he has continued the executive head to the present time. He has received the thirty-second degree of the Ancient Accepted Scottish Rite of the Masonic fraternity, his maximum York Rite affiliation is with Columbia Commandery of Knights Templars, and he holds membership also in the adjunct organization, the Mystic Shrine. His political allegiance is given to the repub-

lican party and he holds membership in the Hamilton Club, the Mystic Athletic Club and the Town and Country Club.

ENGLEWOOD DESK COMPANY

The modern industrial plant of this corporation is located at 5816-5820 South Lowe avenue, and the substantial business now conducted by the company is based primarily upon the manufacturing of high-grade office desks, special attention being given to the production of flat-top desks and various types of modern typewriter desks. In January, 1914, Ellis G. Durkee laid the foundation for this business by establishing a small factory at 1339 Clybourn Place, where he engaged in the manufacturing of office desks in an individual way. Here he made requisition for six thousand square feet of floor space and gave employment to a force of about nine mechanics. In 1915 the factory was removed to the present location, and here the floor space utilized was increased to fourteen thousand three hundred square feet. On the 10th of February, 1915, the business was incorporated under the present title, and the enterprise was progressing in a substantial way when, in October, 1915, a disastrous fire at the factory entailed an approximate loss to the company of twenty thousand dollars. Under these conditions a readjustment became necessary and, on the 23d of February, 1916, a reorganization of the company was effected, with a new corporate charter. At this juncture the present executive officers were chosen, namely: Ellis G. Durkee, president; Bernard G. Olson, secretary and treasurer; and John Olson, vice-president. The factory is of thoroughly modern equipment and facilities and from the same are turned out about seven hundred desks each month, the products being sold to dealers in furniture and office supplies and having won well merited reputation for superiority in design and workmanship. The company's desks establish a standard of excellence, and significant evidence of this fact is given in the company's having received and filled an order for the United States government, the desks thus ordered being placed in use at the military cantonments at Charleston, South Carolina; San Antonio, Texas; and Seattle, Washington, and Washington, D. C. Sales agencies are maintained by the company in the cities of New York, Washington, D. C., and San Francisco, and an efficient corps of traveling salesmen represents the company through a trade territory that comprises virtually all parts of the United States, besides which an excellent trade is being developed in Cuba.

ELLIS G. DURKEE

Ellis G. Durkee, founder and president of the company mentioned in the preceding paragraph, was born and reared in Chicago and after leaving school he became associated with the retail trade in desks and other office supplies. While thus employed he gained most valuable experience, and the same was amplified by active association with factory operations for a time. In the field of manu-

facturing he has gained for himself a substantial place and is known as one of the progressive business men of the younger generation in his native city.

BERNARD G. OLSON

Bernard G. Olson, secretary and treasurer of the Englewood Desk Company, was born in Chicago and is indebted to the public schools of this city for his youthful education and discipline. As a skilled mechanic he gained thorough training through five years of association with the manufacturing of sash and doors, and his technical knowledge has been of great value in connection with his present alliance, his executive and stock-holding association with the Englewood Desk Company having had inception in February, 1916.

ATLAS FORGINGS COMPANY

At 2515 South Artesian avenue is established the modern manufacturing plant of this company, which is the successor of the Kruse Forgings Company and which controls a successful and noteworthy business in the manufacturing of high-grade forgings and the conducting of general blacksmithing, the facilities of the plant being of the best, both in mechanical equipment and in the retention of the services of skilled artisans. Of the company John T. Georgeson is president and Harvey B. Lucas the secretary and treasurer.

This well established industrial enterprise dates its inception from the year 1893, when the firm of Kropp & Elg engaged in the manufacturing of forgings for the tools utilized by drillers of artesian wells, the original factory, of unpretentious order, having been established on DesPlaines street, near Harrison street, and its principal mechanical equipment having been summed up in two small steam hammers, most of the forging work being done by hand. In the original headquarters the business was continued until 1914, but in the meanwhile various changes had occurred in the personnel of the interested principals and the title of Kruse Forging Company had been adopted when, in March, 1914, the business was incorporated under the laws of Illinois. Charles Kruse became president of the new corporation; Sidney L. Graham, treasurer; and William L. Diehl, secretary. In July of the same year the manufacturing plant was removed to the present location, and here the modern industrial building of the company affords ten thousand square feet of floor space. In 1916 was effected a reorganization of the business and the present executive officers assumed control of the well established enterprise, the corporate title of Atlas Forgings Company having been adopted at this time. Under the new management the mechanical equipment of the plant was notably amplified and modernized, and the establishment now has six heavy steam hammers and forges that have capacity for the handling of billets up to ten inches in diameter and up to a weight of thirty-five hundred pounds, besides which the best type of cranes are utilized in the transfer of materials and heavy forgings in the shops. The company now specializes in high-grade

engine work, automobile gears, and forgings for drills, lathes, spindles and heavy shafting, the annual output averaging from fifteen hundred to two thousand tons and the capacity of the plant being taxed in the efficient service rendered to a trade that extends throughout the most diverse parts of the United States and into the various Canadian provinces. So exigent are the demands placed upon the institution that provisions for the enlarging of the plant are now under contemplation. At the time of the reorganization of the business in 1916 the invested capital was definitely increased and most vigorous and progressive business policies adopted, with the result that in the interim the volume of business controlled has increased fully ten fold under the new regime.

JOHN T. GEORGESON

John T. Georgeson, president of the Atlas Forgings Company, was born and reared in Scotland, where he received in his youth excellent educational advantages. In 1904 he came to the United States and established his residence in Chicago, where for eight years he was employed by the extensive and old established firm of Joseph T. Ryerson & Son. For two years thereafter he conducted an independent business in the handling of metal-working machinery, and in January, 1916, he became one of the principals in the reorganization of the Atlas Forgings Company, of which he has since been the executive head.

HARVEY B. LUCAS

Harvey B. Lucas, secretary and treasurer of the Atlas Forgings Company, was born and reared in Chicago and after having availed himself of the advantages of the public schools he entered Lewis Institute, in which representative technical school he completed a thorough course in architectural drawing. For seven years thereafter he was in the employ of the R. J. Ross Manufacturing Company, and he severed this alliance to associate himself with the Atlas Forgings Company at the time of its reorganization, in January, 1916, his technical and executive ability eminently qualifying him for the effective discharge of his duties in the dual office of secretary and treasurer of the company.

THE DEARBORN CHEMICAL COMPANY

The Dearborn Chemical Company was established as the Dearborn Drug & Chemical Works, in 1888. The business was founded to put into effect the principle of correcting boiler feed waters scientifically. Previous to the inauguration of this business, attempts at the correction or treatment of boiler waters had been along very uncertain and often unsuccessful lines, because all waters were treated as if they were alike, and while the chemicals used for one water

might make it more desirable for steam making purposes, the same chemical added to another entirely different water would likely make it more undesirable than it was originally, and in some cases entirely the wrong reagents were added to a water, injuriously affecting the metal of the boilers,—so the Dearborn plan was to make careful mineral analysis of each troublesome water for industrial purposes, thereby specifically determining the cause, and then put together a formula for the correction of each water, and produce these combinations in the most desirable form for easy and economical use by the steam user. This plan met with such success in giving the results desired, that it was but a few years before the business was quite generally extended throughout the country.

The business was started by William H. Edgar, a chemist of unusual ability, and he had associated with him for a time Frank E. Mariner, also a chemist, and his father, Doctor George A. Mariner, who for years was of the firm of Mariner & Hopkins, General Chemists. The Mariners withdrew from the business a few years later, and their interests were acquired by Robert F. Carr, who had become associated with the company shortly after graduating in chemistry from the University of Illinois, in the class of '93. Mr. Edgar was president of the company until his death in 1905, when he was succeeded by Mr. Carr.

The officers of the company in recent years have been Robert F. Carr, president; George R. Carr, vice president and general manager; J. D. Purcell, vice president; G. W. Spear, vice president and Eastern manager; W. A. Converse, secretary and chemical director; R. A. Pearce, treasurer; John W. Brashears, director of purchases and manufactures; D. K. French, directing chemist; E. C. Brown, manager foreign department.

The earlier years of the business were devoted entirely to the analysis and treatment of waters in stationary steam plants. After the company had demonstrated their ability to successfully handle this class of work, and had extended their business to cover the country in general, they took up the question of the treatment of water for railways, for use in locomotive boilers. The problems here were somewhat more intricate, due to the combinations that result from taking waters of varying character at different points along the line. After devoting an extended period to the study of the chemistry of the proposition, and the mechanical conditions, the company found it possible to produce correcting chemicals to meet the required conditions, and bring about successful results in the prevention of scale formation, or corrosion, pitting, or foaming, as the case may be, not only producing great economies in extending the life of flues and sheets, and enabling the railways to keep boilers in service for longer periods between washings, but effecting great saving in the conservation of fuel. For the past twelve years most of the railroads of the country have employed the service of the Dearborn Laboratories to aid them in the correction of solution of their locomotive boiler water problems.

The company early realized that the water correction problem was one not only of chemistry but also of engineering, since the proper and economical application of the chemicals was an important feature of the work. They inaugurated an engineering department, which has grown, along with the business, and the services of these practical engineers are available for advice and assistance, not only to the consumers of Dearborn Products, but to any

DEARBORN CHEMICAL COMPANY

interests where the water problem is a source of waste in boiler energy and fuel consumption.

The company has, through their testing laboratories, taken up various chemical problems for solution from time to time, and having established selling branches throughout the country, with representatives in each territory visiting all manufacturing and power producing interests, for the distribution of water correcting chemicals, it was determined that the same extensive selling organization could be used most advantageously in the distribution of lubricating oils and greases, to the power plants visited. This led the company into the lubricating oil business, which they have actively pursued since 1898. Under the careful supervision of the laboratories of the Dearborn Company, the lubricating products, all of which are refined from the highest quality of Pennsylvania Crudes, have gained an enviable reputation for quality, uniformity, and economy.

The general offices of the company are at 332 South Michigan avenue, Chicago. The headquarters of the eastern department are at 299 Broadway, New York, and branch offices are located in the following cities of the United States and abroad: Boston, Philadelphia, Baltimore, Buffalo, Pittsburgh, Cincinnati, Cleveland, Indianapolis, Louisville, Atlanta, St. Louis, Peoria, Detroit, Milwaukee, St. Paul, Kansas City, Denver, San Francisco, Los Angeles, Honolulu, Manila, Havana, Buenos Aires, Toronto, London, and Santiago, with agencies in Tokio, Tientsin, and Shanghai.

In 1904 the company moved from the plant under lease at 24th and La Salle streets, having purchased a tract of land in the Central Manufacturing District, and built the reinforced concrete, fireproof buildings which house the Chemical manufacturing plant, and the laboratories of the company.

In 1912 the company built a fireproof manufacturing plant on land they had secured with unusual shipping facilities, at 2454-2464 Dundas street, West, Toronto, Canada, which is operated by the Dearborn Chemical Company, of Canada, Limited, thus giving the steam users of Canada, both stationary and railway, the same service as they have been able to give the consumers of Dearborn products in the United States.

LEITELT BROTHERS

At 7727-33 South Chicago avenue is established the modern brass, bronze and aluminum foundry of Leitelt Brothers, and the institution represents one of the important and well ordered industrial enterprises of South Chicago. In 1908 Edward and Charles Leitelt formed a copartnership and engaged in business as brass, bronze and aluminum founders, with headquarters at 6340 Dorchester avenue, where operations were continued until the business had grown to such volume as to demand much larger productive accommodations and the present well equipped plant was erected for the purpose. In their original foundry the brothers utilized a room only ten by sixteen feet in dimensions and gave employment to only one man, so that it may be seen that operations were instituted on the most modest scale, the brothers applying themselves vigorously as workmen

and both being skilled artisans in the line of industrial enterprise through the medium of which they have made advancement to their present substantial status. In 1913 commercial expediency led to the incorporation of the business and the original title of Leitelt Brothers was retained, Charles Leitelt becoming president of the company, Edward Leitelt the vice-president and treasurer, and Mathias J. Hevenor, secretary; Ralph C. Brown, general superintendent. In the year that thus marked the incorporation of the industry under the laws of Illinois the company purchased the site of the present plant,—a tract 103 feet by one hundred and twenty-five feet in dimensions, and proceeded to effect the erection of a modern industrial building that gives an aggregate floor space of ten thousand square feet and that has been given the most modern mechanical equipment. Here ten furnaces are in operation and they have an output capacity of one and one-half tons daily of brass, bronze and aluminum castings of the highest grade, the average daily output being one ton of brass castings and five hundred pounds of aluminum castings. Special attention is given to the production of heavy brass and aluminum castings and special alloys for rolling-mill and marine trade, but the facilities of the plant are such that the company is prepared to handle all kinds of foundry work in its line, in the production of castings weighing from one-fourth of a pound to 2 tons. The company has, through careful and prolonged experimentation developed a special alloy that is found remarkably efficient and enduring in its application to high-speed and heavy-duty castings, and another important feature of the business is in the execution of art bronze castings. In the foundry employment is given to thirty-five skilled operatives and to meet the demands of the constantly expanding business the plant is being enlarged by the addition of twenty-five hundred square feet of floor space.

EDWIN LEITELT

Edwin Leitelt, vice-president and treasurer of the corporation of Leitelt Brothers, was born in the city of Grand Rapids, Michigan, on the 4th of July, 1875, and there he received his early education by attending the public schools, this discipline later being supplemented by a special course in electrical engineering, at Chicago's famous school of technology, Armour Institute. Mr. Leitelt came to Chicago in 1898 and for the following six years was in the employ of the Commonwealth Edison Company. Thereafter he was operating engineer in a Chicago manufactory until 1908, when he became associated with his brother Charles in founding the business of Leitelt Brothers, as indicated in the preceding article descriptive of the enterprise. Mr. Leitelt is affiliated with the Knights of Columbus.

CHARLES LEITELT

Charles Leitelt, president of Leitelt Brothers, was born at Grand Rapids, Michigan, on the 16th of September, 1877, and after having duly availed himself of the advantages of the public schools of his native city he there entered upon

an apprenticeship in the Keeler Brass Works. After the completion of his apprenticeship he worked as a journeyman for six years, and in 1902 he came to Chicago, where he continued as superintendent in the employ of the Chicago Street Railway Company until 1908, when he formed a partnership with his brother Edwin and founded the substantial industrial enterprise now conducted under the corporate title of Leitelt Brothers.

RALPH C. BROWN

Ralph C. Brown is a native of Michigan, born in Caledonia, September 19, 1876, and as an infant removed to Petoskey with his parents where he took full advantage of the excellent schools of that northern city. Then he entered the employ of Keeler Bros. Brass Foundry, which later removed to Grand Rapids, Michigan. During this period he availed himself of a technical course in the Foundry Practice with the Scranton School, and he has been connected with many leading firms in this line. Beginning as foundry foreman of the Hamburg Brass Company, at Hamburg, Ontario, came to Chicago in 1916, and accepted position as general manager of the Leitelt Brothers foundry. He is prominent in the order of the Canadian Foresters.

CHARLES KRESL, INC.

In the manufacturing of wooden boxes for commercial and general industrial purposes the corporation whose title initiates this paragraph has its modern and thoroughly equipped plant at 1313 West Fulton street, and the enterprise dates its inception from the year 1885, when Charles Kresl began operations on a small scale, in limited quarters, at the corner of Clinton and Desplaines streets. Correct policies and effective service brought about a continuous expansion of the business and finally rendered it necessary to obtain larger manufacturing quarters, with the result that, in 1890, was effected the purchase of the property that constitutes the site of the present modern plant. Here, on a lot thirty by one hundred and fifty feet in dimensions, was erected a substantial four-story buildings, with provision made for the residence of Mr. Kresl and his family on the front part of the lot, facing Fulton street. The mechanical equipment and incidental accessories of the factory have been at all times kept at the highest standard and in the establishment is carried on with marked success the manufacturing of cigar boxes, battery boxes, toll boxes and other products representing likewise the better grade of workmanship. Special new machinery was installed for the manufacturing of battery boxes, and this department of the enterprise has become one of marked importance. The business was incorporated in 1914, with a capital stock of seventy-five hundred dollars, and in the plant employment is now given to an average force of twenty-five persons, the most of whom are skilled mechanics. The annual business of the corporation has reached an average aggregate of about forty thousand dollars and the

trade is in large measure of local order, though the high-grade output has extended the business also into other parts of the territory normally tributary to Chicago. The present officers of the company are as here noted: George Kresl, president and treasurer; Richard H. Vavrinek, vice-president; and Martha Kresl, secretary.

Charles Kresl, the honored founder of this now substantial and prosperous industrial enterprise, was a native of Austria and was sixteen years of age when he came to America, in 1864. He first located in the city of Philadelphia, where he worked at the trade of locksmith, and finally he went to the state of California, where he was engaged in the lumber business for a number of years. About the year 1880 he established his permanent home in Chicago, and here he achieved through his earnest and well ordered industry substantial and well merited success, with secure status as a loyal citizen and progressive business man. Here he continued his active association with the business which he founded until his death, which occurred September 24, 1915.

George Kresl, who succeeded his father as the executive head of the business of Charles Kresl, Incorporated, was born in Chicago in the year 1891, and here he continued his studies in the public schools until he had duly availed himself of the advantages of the high school. He then became actively associated with his father's business, familiarized himself thoroughly with all details of the same, and thus he was well fortified in both a technical and executive sense when he assumed the dual office of president and treasurer of the company, of which his younger sister, Martha, is the secretary. Under his progressive management the business continues to expand in scope and the sterling policies adopted by the honored father are still maintained. Mr. Kresl still remains in the ranks of eligible young bachelors in his native city, and he is a popular member of the Chicago Bohemian Club, his chief recreation during the season being gained through his devotion to the alert game of tennis. The family home is now at 1911 South Avers avenue. His mother is still living, her maiden name having been Anna Patera and her birth having occurred in Austria. Of the four children, Charles, who is familiarly known as Carl, is the eldest, and the others are Olga, George and Martha.

THE LEIGH BANANA CASE COMPANY

So stupendous in magnitude and variety are the manufacturing and commercial interests of Chicago as to make almost impossible such a survey of the same as to give to average persons in search of information any full and accurate conception of the manifold industrial activities that thus go to make the western metropolis one of the world's greatest economic and commercial centers. Each added manufacturing enterprise contributes its quota to this pre-eminence, and thus it is gratifying in this publication to accord recognition to such a well ordered concern as that whose title initiates this paragraph.

The Leigh Banana Case Company, as the title implies, controls an enterprise of somewhat unique order, its well equipped plant being situated at 2230 South Union avenue. The business was founded January 5, 1906, by Charles Q. C.

Leigh, who had come to the city in the preceding year and who had control of the valuable patents on the superior banana cases the manufacturing of which he was determined to promote in this great commercial center. It is needless to say that he met with obstacles, but over the same he made his way in the presentation of his plans, and finally he was able to enlist co-operation, though the new enterprise was initiated on a very modest scale, as implied when it is stated that at the incorporation of the company its capital stock was only one thousand dollars, which was later increased to ten thousand. He became vice-president of the company; Anthony Jerrata the president, and Albert Dooley secretary and treasurer. The corporation was formed for the manufacturing of the improved and patented banana crates which Mr. Leigh was determined to exploit, as he was imbued with utmost confidence in the demand that could be developed for the product when it was properly introduced to the trade. The company has since amplified its operation by adding the manufacture also of crates or cases for other kinds of fruit. Operations were instituted in a small way and in meager quarters in a building near the corner of South Water and North State streets. With the substantial expansion of the business removal was made to more eligible quarters, at 42 River street, and later quarters were obtained in the Masonic Temple building, whence removal was subsequently made to 219 West Huron street. In May, 1915, the company took possession of its present well equipped quarters, where two floors of a modern building are utilized for the assembling plant and offices, with an aggregate floor space of 21,500 square feet. So substantial has been the consecutive growth of the enterprise that the company now has a total of sixteen assembling plants besides owning and operating three veneer mills, located respectively at Atwater, Ohio; Trimble, Tennessee, and Des Arc, Arkansas. Assembling plants are established at Minneapolis, Minnesota; Omaha, Nebraska; Milwaukee, Wisconsin; St. Louis, Missouri; Evansville, Indiana; Nashville, Tennessee; Knoxville, Tennessee; and Macon, Georgia, besides the headquarters assembling plant in Chicago. In connection with the various departments and branches is retained a corps of about three hundred employes, and the average annual business has now attained to an aggregate of about half a million dollars, the trade being confined to the United States save for an appreciable business that has been developed in the Canadian provinces. The present officers of the company are as here designated: Charles Q. C. Leigh, president; Charles M. Leigh, vice-president; and Carl G. Leigh, secretary and treasurer. The secretary and treasurer is a son of the president of the company, and the vice-president is a nephew of Charles Q. C. Leigh, who has given over to his younger associates the larger part of the active control and supervision of the business.

CHARLES Q. C. LEIGH

The president of the company mentioned in the foregoing paragraphs was born in the state of Mississippi and for many years he was engaged in the fruit business in the city of Paducah, Kentucky, where he remained until 1905, when he came to Chicago and effected the organization of the company of which he is

now president. He had obtained patents on his banana case while still a resident of Paducah, and the patents cover the various details of construction, so that the improved crate or case manufactured by the company is the only one of the kind produced in the United States. Mr. Leigh is an appreciative and valued member of the Southern Club of Chicago, is similarly identified with the South Shore Country Club, and still retains membership in the Paducah Country Club, at his former home in Kentucky. He has virtually retired from active association in the business which he founded and developed, and the family home is at Paducah, Kentucky.

CARL G. LEIGH

The secretary and treasurer of the Leigh Banana Case Company was born in Paducah, Kentucky, April 8, 1890, and in his native city he acquired his early educational discipline, which was supplemented by attending high school after the removal of the family to Chicago. In 1908 he became associated with the business founded by his father, and he made an excellent record as a traveling salesman for the Leigh Banana Case Company. In 1912 he was made secretary and treasurer of the company, and in this capacity he has had virtually the entire charge of the extensive business since the retirement of his father. He is a member of the South Shore Country Club and resides at 5140 Kimbark avenue.

ROBERT SETH LINDSTROM

More than passing distinction has been achieved by Robert Seth Lindstrom as one of the prominent architects in the city of Chicago, and his work has been such in the western metropolis as eminently to entitle him to recognition in this publication. Such consideration is specially due by reason of the part he has played in connection with the development of Chicago's celebrated Central Manufacturing District, which is undoubtedly one of the world's greatest centralized manufacturing communities. When the development of this district was instituted by progressive and influential Chicago manufacturers Mr. Lindstrom was retained as the official architect, and it was largely under his effective direction that the locality was transformed from what had once been a cabbage farm into a virtual city within itself,—a locality that is now the most noted exclusive manufacturing district in the world. Though he is still a young man Mr. Lindstrom has high standing in his profession and in the same has had to do with the designing and erection of many important buildings in the great metropolis of the west, his loyalty to Chicago being the greater by reason of the fact that he can claim the city as the place of his nativity. In his profession he is now associated with Portland Cement Association with offices in the Conway Building. He is actively identified with the Illinois Society of Architects, the Illinois Chapter of the American Institute of Architects, and the American Institute of Architects of Washington, D. C., his professional en-

thusiasm and appreciation being on a parity with his recognized technical ability.

Mr. Lindstrom was born in Chicago on the 29th of September, 1873, and after having duly availed himself of the advantages of the public and private schools, a business college and oratorical and dramatic school education, he completed in the Chicago Art Institute a thorough course in architectural technology. After his graduation in these splendid Chicago institutions he became associated with the well known architect, William A. Otis, of Chicago, with whom he remained six years, in the meanwhile gaining wide and varied experience of special professional value. For thirteen years thereafter he was associated with another distinguished Chicago architect, Jarvis Hunt, and for the ensuing three years his alliance was with the firm of Marshall & Fox, one of the foremost in the architectural profession in the west. He was with this firm at the time when it was supervising the erection of the magnificent Blackstone hotel, which was designed by this firm.

In 1910 Mr. Lindstrom had the distinction of being selected as the first official architect of the Central Manufacturing District, and with characteristic enthusiasm he entered upon the stupendous work that thus devolved upon him. His services covered a period of four years, and within this time he was also the architect of the great Stock Yards Inn building at the Union Stock Yards,—a structure that is one of the largest and most important hotel buildings in the city. He was the architect of a large number of the principal buildings in the Central Manufacturing District, including that of the Central Manufacturing District Bank, as well as the buildings of the following named concerns: O. W. Richardson & Company, the United Drug Company, the Central Forwarding Company, the Oxweld Acetylene Company, the Kinney-Rome Company, the Pullman Couch Company, the Chicago Curtain Stretcher Company, the Chicago Mill Work Supply Company, the Empire Iron & Steel Company, the Atwood & Steele Company, the Bernard Mayer Company, the Fitzsimmons Steel & Iron Company, the Rosenberg Paper Company and many others. The policies and methods brought to bear by Mr. Lindstrom had much to do with establishing the high building standards that have since been maintained in the great central manufacturing district which has added much to the fame of Chicago as an industrial and commercial center.

On his retirement from his position as official architect for the district noted, in 1914, Mr. Lindstrom opened an office in the Transportation building and engaged in the independent work of his profession, and in 1917 he found it expedient to form his present effective alliance with Portland Cement Association as architect for the association.

He is loyally alert and progressive in his civic attitude, his political allegiance is given to the republican party, and he holds membership in the Beverly Country Club.

Mr. Lindstrom is a thirty-second degree Scottish Rite Mason and a member of the Mystic Shrine. A member of Republic Lodge, No. 914, A. F. & A. M., Oriental Consistory and Medinah Temple, all of Chicago.

On the 30th of August, 1905, was solemnized the marriage of Mr. Lindstrom to Miss Caroline A. Olson, of Denver, Colorado, and they have one child, Dor-

othy Caroline. The family home is at 5431 Greenwood avenue, in the beautiful Hyde Park section of Chicago.

AMERICAN INSULATED WIRE & CABLE COMPANY

As a representative concern that is contributing its quota to the industrial and commercial pre-eminence of Chicago this company is properly given specific consideration in this publication. Like many others of the large industrial enterprises of the western metropolis this industry had a somewhat modest inception, and its splendid expansion is indicated in the extensive plant, at 954-64 West Twenty-first street, as well as in the broad and important scope of the business at the present time. In 1899 Nathan T. Brenner and William Loeffler formed a copartnership and established at 241 South Jefferson street a small factory for the turning out of insulated wire and cable of superior type. Careful and progressive policies combined with high-grade products to effect a normal but rapid expansion of the business, and in 1906 the present building was leased for the accommodation of the enterprise, the same affording thirty thousand square feet of floor space. The year 1917 found even these large quarters inadequate and the company has purchased on Twenty-first street, between Morgan and Fisk streets, sixty-four thousand square feet of ground, upon which is being erected for its use a substantial and thoroughly modern building of six stories, the same to be completed and made ready for occupancy January 1, 1918.

The substantial increase in business made it commercially expedient to effect, in 1905, the incorporation of the same under the laws of Illinois, and at that time the present corporate title was adopted. The capital stock was placed at one hundred thousand dollars and this figure was later raised to two hundred thousand, the present intention of the company being to increase the capital to one million dollars,—an adjustment which the business seems fully to justify. The personnel of the executive corps of the company at the present time is as here noted: Nathan T. Brenner, president; L. G. Brenner, vice-president; Norman T. Brenner, treasurer; and Meyer B. Mervis, secretary. The trade transactions of the company for the year 1916 aggregated about two and one-half million dollars, and the business is almost entirely domestic in its ramifications, no special effort having been made to develop an export trade. The company manufactures the finest grades of insulated wire and cable for telephone and electric-power transmission, and each year records a splendid advancement in the business, the factory being operated to full capacity throughout each successive year.

NATHAN T. BRENNER

The president of the American Insulated Wire & Cable Company was born in the city of Buffalo, New York, in the year 1866, where he was reared to adult age and where he made good use of the advantages afforded in the public schools. As a youth he became a salesman in a department store in Buffalo, and

NATHAN T. BRENNER

he thus continued his services until 1888, when he came to Chicago and assumed a position of similar character. Finally his ability led to his being made manager of the department store of L. Klein, and he remained with this well known establishment seven years. In 1896 he was elected representative of the Twentieth ward in the city council, and in this office he served seven years, with characteristic loyalty and liberality. Mr. Brenner is to be given enduring credit for his earnest and effective endeavors to bring about the development of the small-park system of Chicago, and while a member of the council he was foremost in advocating and bringing about the establishing of the municipal court. He was personally and officially vigorous in the furtherance of civic and material improvements, and was the prime mover in bringing about the construction of the Canal street viaduct by the Chicago, Burlington & Quincy Railroad Company and the Chicago City Railway Company, this being the initial improvement that established the precedent for the rebuilding and maintaining of all viaducts by railroad companies utilizing space below and in conjunction with the street railway surface lines occupying the viaducts themselves. By this policy the city has been relieved of a vast expense for which it was not justly to be held liable. As a member of the city council Mr. Brenner was the first man to obtain an appropriation for public street lighting and he also took the initiative in securing the enactment of an ordinance requiring the street-railway companies to issue transfers at intersection lines on Halsted street. He was also father of the ordinance providing for the payment of salaries to the members of the board of aldermen,—a policy for the enactment of which he waged a vigorous fight, including the obtaining of legislation in the state capital and the final passing of the ordinance by the city council.

Soon after his retirement from the municipal office in which he had thus given such admirable account for himself and to the city, Mr. Brenner established the business which he has been resourceful in developing into the splendid industrial enterprises controlled by the company of which he is president, and he has proved a representative captain of industry in Chicago as well as a most loyal and public-spirited citizen.

In politics Mr. Brenner gives staunch allegiance to the Republican party. He is affiliated with the Masonic fraternity and is one of the popular members of the Germania Club and the Edgewater Beach Yacht Club. He also served nine years as grand master of the grand lodge of the Independent Western Star Order, a fraternal organization. His attractive residence is at 5839 Sheridan Road.

In 1886 was solemnized the marriage of Mr. Brenner to Miss Lettie G. Willoughby, of Holland Landing, Province of Ontario, Canada, her father, David Willoughby, having been a prominent and influential citizen. Mr. and Mrs. Brenner have two children, Norman T. and Ruth, now Mrs. Meyer B. Mervis.

FEINBERG & KAHN, INC.

This well ordered corporation has developed from a modest inception a substantial and important industrial enterprise in the handling of iron and steel scrap and railway material, and a specialty is made of dismantling power

plants and the wrecking of other industrial plants. The company has its large and well arranged quarters at the corner of Thirty-eighth and Laflin streets. S. J. Feinberg and M. S. Kahn formed a copartnership under the firm name that is retained in the present corporate title and engaged in dealing in scrap iron and steel, as well as other discarded metal, with headquarters at what was then 179 West Taylor street. Energy and good management brought success to the enterprise and eventually it became imperative for the firm to provide larger quarters. Accordingly, in 1905, the firm purchased a tract of land one hundred by one hundred and seven feet in dimensions, at 1067-77 West Taylor street, where was opened a well equipped yard for the handling of a large volume of business. The firm installed modern scales, shears and magnets for the handling of scrap metals and making the same ready for shipment. So substantial was the growth of the business at this location that in 1909 it was again found expedient to provide larger accommodations. In that year the business was removed to 3701 South Ashland avenue, and here the equipment was augmented by the installing of four disintegrating machines and two electric derricks with magnets of six tons' capacity, the while adequate transportation facilities were gained by means of a direct switch track capable of accommodating five cars. At this location the business was continued until 1916, when the company purchased at the corner of Thirty-eighth and Laflin streets, in the very heart of the celebrated Central Manufacturing District of Chicago, a tract of land one hundred and twenty by three hundred and twenty-five feet in dimensions. Here the company erected a modern office building and a mammoth steel shed that will accommodate one thousand carloads of prepared scrap. The excellent facilities of the new plant were further increased by placing in commission a traveling crane operated by electricity, and having a capacity for the lifting and transferring at one operation twenty tons of material.

The business was continued under copartnership relations until 1912, when it was incorporated under the laws of Illinois, the original firm title being retained. The personnel of the official corps of the corporation is as follows: M. S. Kahn, president; S. J. Feinberg, treasurer; and J. M. Taft, secretary. The company is represented in active membership in the Central Manufacturing District Association. In the conducting of its large volume of business this concern gives special attention to supplying steel to rolling mills, iron for foundries and to the dismantling of power plants, railway rolling-stock and heavy machinery, besides which the company handles large quantities of brass, copper, tin and zinc specially available for use in brass and bronze foundries.

M. S. KAHN

M. S. Kahn, president of the corporation concerning which record has been made in the preceding article, was born and reared in Russia, where he received his youthful education under comparatively auspicious conditions. In 1892 he came to the United States and established his residence in Chicago, and here he became identified with his present line of industrial enterprise in the

year 1902, his success having been the result of ability, energy and close application. He is affiliated with the Knights of Pythias and the Independent Order of Odd Fellows.

J. S. FEINBERG

J. S. Feinberg, treasurer of Feinberg & Kahn, Inc., was born in Russia, where he was reared to adult age and where he received his early educational discipline. He has been a resident of Chicago since 1893, the year that marked his emigration to America, and in 1902 he became associated with Mr. Kahn in founding the business that under their able and honorable management has been developed into an enterprise of most substantial order. Mr. Feinberg holds affiliation with the Independent Order of Odd Fellows.

THE BRAND BREWING COMPANY

The name of the Brand family has been most prominently identified with the history of the brewing industry in Chicago since the pioneer days and has represented a large influence in the development of industries of magnitude and importance, even as it has stood exponent of broad-gauged and loyal citizenship as one generation has followed another on to the stage of life.

The present Brand Brewing Company, which is most significantly upholding the prestige of the name, was organized and incorporated in 1898, with Virgil M. Brand as president; Horace L. Brand, vice-president; and Armin W. Brand, secretary and treasurer. The first sales of the brew from the new establishment were made in October, 1899. The buildings and yards of the company cover about ten acres of ground, and the plant is in every respect of the most modern type, equipped with the latest improved machinery and other accessories and with every provision for the turning out a product of the highest-grade. The brewery has a capacity for the output of about one hundred and seventy-five thousand barrels of beer annually, operations are based on a capital stock of one million dollars, employment is given to an average force of about one hundred persons and the concern ranks among the best of its kind in the Union, the special brands, known as the "Sonoma" and the "Keno" having commended themselves to the trade and the public for their superiority and having been potent in expanding the business of the company to its present substantial proportions, the trade of the concern being largely local, though a considerable amount of the beer is shipped to points outside of Chicago. The officers of the Brand Brewing Company in 1917 are as here designated: Virgil M. Brand, president; Armin W. Brand, vice-president; and Philip R. Brand, secretary and treasurer. The plant of the company is most eligibly situated on Elston avenue, with office at No. 2530 on that thoroughfare. In later paragraphs will be given adequate information concerning both the Michael Brand Brewing Company, which long held a prominent place in Chicago industrial circles, and also data concerning both Michael and Rudolph Brand, but at this juncture

more special reference is consistently made to the president and secretary of the Brand Brewing Company.

VIRGIL M. BRAND

Virgil Michael Brand, president of the Brand Brewing Company, was born at Blue Island, Illinois, January 16, 1862, and is a son of Michael and Philippine (Darmstaetter) Brand, both of whom were born in Germany but the marriage of whom was solemnized in the United States. Concerning the career of the father more specific information will be given in an appending memoir. Virgil M. Brand acquired his early education in the public schools of Chicago and when sixteen years of age initiated his practical experience in connection with his father's well established brewing business. In 1889 the Michael Brand Brewing Company became a part of the United States Brewing Company, and in 1890 Virgil M. Brand succeeded his father as president of the latter corporation. In 1891 the plant and business were sold to an English corporation, and thereafter Mr. Brand was not actively associated with business until 1898, when he became one of the founders of the Brand Brewing Company, of which he has continued the president during the intervening years. He was also president of the Globe Brewing Company until the same was absorbed by the Brand Brewing Company, in 1910. He is vice-president of the Brandville Fruit Farm Company, which is developing a fine property in Brandville, Howell county, Missouri.

Mr. Brand is a life member of the Chicago Art Institute, holds membership in the Illinois Athletic Club, the Chicago Schwaben Verein, the National Geographical Society, the German Historical Society of Chicago, the Chicago Numismatic Society, the Knights of Pythias and various other organizations of representative order. He is a student and reader and makes of books and rare coins a virtual hobby. He has a splendid library of rare books, a goodly number being printed in foreign languages. Mr. Brand was a lad of about nine years at the time of the great Chicago fire and recalls many incidents of the same, including the destruction of his father's brewery. He takes loyal interest in civic affairs and in all things tending to advance the social and material welfare of his home city. Mr. Brand is a bachelor.

PHILIP R. BRAND

The secretary and treasurer of the Brand Brewing Company was born at Blue Island, Illinois, October 21, 1877, and is a son of Rudolph and Clara (Ulrich) Brand, the former a native of Germany and the latter of Blue Island, Illinois. A tribute to Rudolph Brand will be paid in later paragraphs. Philip R. Brand is indebted to the public schools for his preliminary education, and in 1899 he was graduated in historic old Yale University, with the degree of Bachelor of Philosophy. While in the university he took a prominent part in

its athletic affairs, as a member of its track team, besides which he was there affiliated with the Chi Phi fraternity. Within a few weeks after his graduation Mr. Brand went to Europe, for the special purpose of studying and investigating the beet-sugar industry, and he remained abroad until the autumn of 1900. Soon after his return to Chicago he went to Rochester, Michigan, as chemist in the beet-sugar factory at that place, and there he remained until December of that year. Thereafter he was identified with the United States Brewing Company in Chicago until 1904, when he became associated with Virgil M. Brand in purchasing the plant and business of the Globe Brewing Company, of which he became secretary and treasurer. In 1910 this company was consolidated with the Brand Brewing Company, of which latter he has since served as secretary and treasurer.

Mr. Brand is a member of the Chicago Athletic Association, is a life member of the Chicago Art Institute, is president of the Western Airedale Terrier Club, a member of the Airedale Club of America, an associate member of the American Kennel Club, and a member of the South Shore Country Club of Chicago. He is well known as a dog fancier and takes great interest in well bred dogs. He is the owner of thirty or more thoroughbred Airedale terriers, which he has exhibited at kennel expositions in all parts of the Union, and he has his own individual kennels at 2530 Elston avenue, Chicago, and at Palos Springs, Illinois. He is a member of the Yale Club of Chicago.

May 15, 1902, recorded the marriage of Mr. Brand to Miss Maude Gottfried, of Chicago, and they reside at 4559 Ellis avenue.

MICHAEL BRAND

This honored pioneer of the brewing industry in Chicago was born at Odenheim, Rheinhessen, Germany, March 23, 1826, was afforded good educational advantages in his native land and there served a thorough apprenticeship in the Goldbeck brewery, in the city of Worms. After completing his apprenticeship he traveled extensively in France and Switzerland and in 1848 he founded a brewery in his native town. In that year he became identified with the historic revolutionary movement in Germany and after its suppression, like many other sterling sons of the German fatherland, he came to America. He arrived in this country in July, 1852, passed the first year at Detroit, Michigan, and then came to Chicago, where he entered into partnership with Valentin Busch, with whom he became associated with the operation of a brewery at Blue Island, with a branch on Cedar street, Chicago. Shortly before the great Chicago fire of 1871 the partnership was dissolved and Mr. Brand assumed control of the Cedar street brewery, under the title of the Michael Brand Brewing Company. The brewery was destroyed by the ever memorable fire of 1871, but within three months a new plant had been constructed and operations resumed. In 1878 Rudolph Brand, a nephew of Michael, became interested in the business and in that year the original brewery on Cedar street was changed into a malt house and a new brewery was erected at Elston avenue and Snow street. In 1889 the brewery was sold to the United States Brewing Company, and there

after Michael Brand lived practically retired until his death, which occurred October 26, 1897. In 1862-3 he served as a member of the Illinois legislature and later he gave characteristically loyal and effective service as a member of the city council of Chicago. In 1859 he married Miss Philippine Darmstaetter, whose father was a prosperous brewer in the city of Detroit, and she preceded her husband to the life eternal, the three surviving children being Virgil M., Horace L., and Armin W.

RUDOLF BRAND

The late Rudolf Brand, whose death occurred March 24, 1916, was for many years one of the successful business men and honored and influential citizens of Chicago. He was born in Odernheim, Hessen, Germany, April 10, 1851, was educated in the schools of Darmstadt and after an apprenticeship to the brewing trade he came to the United States in 1868. Here he became connected with the brewery of his uncle, the late Michael Brand, and in 1874 he purchased the previously mentioned brewery at Blue Island. This he operated until 1878, when he returned to Chicago and became a partner in the Michael Brand Brewing Company. When the property of the company was sold to the United States Brewing Company, in 1891, Rudolf Brand became president of the latter corporation, a position which he retained until January 1, 1916, when he retired, his death occurring only two months later. He was also president and treasurer of the United States Security Company of Chicago, was treasurer of the city of Chicago from 1881 to 1883, and a member of the board of education, 1884-7, his political allegiance having been given to the democratic party. From 1895 to 1899 he was vice-president of the United States Brewers' Association, and in the latter year he was elected its president. Upon his retirement from the latter office, in 1901, the organization presented him with a magnificent painting by the celebrated artist Ridgway Knight, in token of esteem and appreciation of his services. Mr. Brand's capitalistic investments were large and important and involved his service as vice-president of the Chicago Heights Land Association and the Chicago Heights Terminal Transfer Railroad. Mr. Brand was prominently affiliated with the Masonic fraternity, in which he received the thirty-second degree of the Scottish Rite, and he was long a valued member of the Germania Mænnerchor.

In the year 1875 was solemnized the marriage of Rudolf Brand to Miss Clara Uhlich, daughter of Ernst Uhlich, of Chicago, and she survives him, as do also three children,—Hedwig, who is the wife of Carl M. Gottfried, of Chicago; Philip Rudolf, of whom mention has been made in preceding paragraphs; and Alfred, who is now living in Pasadena, California.

THE AMERICAN METAL MOULDING COMPANY

Another of the well ordered and important manufacturing institutions that lends its quota to the commercial supremacy of the great western metropolis is

that of the American Metal Moulding Company, the plant and offices of which are established at 1123 West Thirty-seventh street, in the locality designated as the Central Manufacturing District of Chicago and with the unexcelled facilities there afforded by the Chicago Junction Railway. In the manufacturing of metal mouldings and other metal specialties the company retains at its plant a force of about twelve employes, the greater part of the work being done by special designed and constructed machinery of the most modern order. The output from the factory each month under normal conditions has an average valuation of about twenty-five thousand dollars, but under the conditions of the present time, when much of the basic metal supply is utilized for the manufacturing of war supplies, the company's business is somewhat irregular from the production standpoint, owing to the difficulty in obtaining needed material.

The American Metal Moulding Company was organized and incorporated in 1913, and the personnel of its official corps is as here noted: G. V. Johnson, president; W. T. Kelly, vice-president; and William A. Smith, secretary and treasurer. In addition to these executives the directorate of the company includes also Raymond W. Beach and Benjamin R. Smith.

G. V. Johnston, president of the above mentioned company, was born in Jamestown, New York, on the 21st of September, 1882, and has proved himself one of the resourceful and progressive young business men of Chicago. After having availed himself of the advantages of the public schools he applied himself diligently and effectively to the completion of a course in mechanical engineering, through the medium of the celebrated International Correspondence School, at Scranton, Pennsylvania. Prior to coming to Chicago, in the autumn of 1911, Mr. Johnston had been employed in the manufacturing of tools and metal mouldings at Jamestown, New York, and upon coming to Chicago he became superintendent of the factory of the Drawn Metals Company. In 1913 he became one of the principals in effecting the organization of the company of which he is now president, and the success of the enterprise has been in large measure due to his technical ability, progressive policies and initiative force. He is thoroughly appreciative of and loyal to Chicago and its institutions.

THE CHICAGO CURTAIN STRETCHER COMPANY

The manifold and varied manufacturing concerns that combine to make Chicago one of the world's greatest commercial and industrial centers challenge the closest and most appreciative investigation, and the results are both inspiring and instructive. Thus it is well within the province of this publication to make specific mention of as many as possible of the representative institutions that lend to this precedence. Under such conditions it is gratifying to make specific record concerning the Chicago Curtain Stretcher Company, the headquarters of which are established at 3713-39 Wall street. The Company was organized in 1897, in January of which year it was incorporated with a capital stock of ten thousand dollars, the original location of the business having been at 214 South Clinton street. Charles Carlson is president and secretary of

the company, and Clarence G. Carlson is treasurer. In addition to manufacturing curtain stretchers of special design and definite superiority, the company has also developed a prosperous business in the manufacturing of the most attractive types of bird houses and flower boxes, besides other woodenware for household use. The various products find a ready demand throughout a trade territory that extend into all sections of the United States and the enterprise has been developed upon honor and effective service. The building occupied is a three-story brick structure, two hundred and seventy-five by one hundred and seven feet in dimensions. It has direct service through the medium of the Chicago Junction Railway, and in the handling of the various details of the business about forty-five employes are retained.

CHARLES CARLSON

The president of the company above mentioned was born in Westergotland, Sweden, on the 13th of December, 1871, and was reared and educated in his native land. Imbued with the ambition and resolute purpose so typical of the sterling people of the far northland, he determined to seek the broader opportunities to be found in the United States, and a few months prior to his twentieth birthday anniversary he came to America, in 1891. He made Chicago his destination and here he attended night school, for the purpose of gaining command of the English language. In the meanwhile he was employed two years in a wood-working factory, and at the expiration of this period he initiated in a modest way his present business enterprise. In the initial stage of the undertaking he was associated with Walter A. Mayer, who later retired from the business. His only son is now treasurer of the company. Mr. Carlson is a republican in his political allegiance, takes loyal interest in all that touches the welfare of the city of his adoption, and he is a popular member of the Central Manufacturing District Club.

On the 15th of May, 1895, was solemnized the marriage of Mr. Carlson to Miss Mary Johnson, who was born in the same district of Sweden as was he himself, and they have two children,—Clarence G. and Florence.

BENJAMIN MOORE & COMPANY

This is one of the extensive and representative corporations in the American field of industrialism as touching the manufacturing of and wholesale dealing in paints, varnishes, wall finishes, etc., and, like many other eastern corporations, the company came to realize the imperative expediency of establishing a branch plant in Chicago, for the purpose of availing itself of the city's unrivaled advantages as one of the greatest commercial and distributing centers of the country. The original Chicago manufactory was not one of pretentious order, but from this inception has been developed a large volume of business throughout the territory tributary to the city, in the western and middle states, and to meet the

ever increasing demands has finally been erected by the company one of the extensive and modern manufacturing plants of the western metropolis, the same being situated at 401-421 North Green street.

The now extensive industrial enterprise controlled by Benjamin Moore & Company was founded in 1888, with headquarters in the city of Brooklyn, New York, where are still maintained the large eastern factories of the corporation, besides which branches are established in Cleveland, Ohio, Toronto, Canada and St. Louis, Mo., so that the concern has admirable provisions for facilitating the handling of its extensive business in the various sections of the United States as well as in the Canadian provinces. The Chicago factory began operations in 1897, and the Cleveland, Toronto, St. Louis plants were established later. Benjamin Moore, the founder of the original business, is chairman of the Board of directors of the company which bears his name and he resides at Montclair, New Jersey, more specific record concerning Livingston P., president of the company, being given in an article that shall supplement that here presented. The Brooklyn factory of the company is the largest of its kind in the old Empire state.

In 1897 Livingston P. Moore, came to Chicago to establish the western factory. He effected the lease of a four-story building that afforded an aggregate floor space of twelve thousand square feet, and in the same was initiated the manufacturing of paints and varnishes, as supplemental to the activities of the parent establishment in Brooklyn. Under the vigorous and effective management of Mr. Moore the business of the Chicago factory rapidly expanded, and the high grade products constituted the most effective advertising for the new Chicago institution. The business from the Chicago headquarters attained to an aggregate of eighty-thousand dollars for the first fiscal year, and the splendid advancement that has since been made is indicated with definite significance when it is stated that the transactions of the company for the year 1916 attained to the noteworthy aggregate one million three hundred thousand dollars.

At the original Chicago factory operations were continued five years, at the expiration of which the continued growth of the business demanded that larger accommodations be secured. Thus, in 1902, Mr. Moore purchased the site of the present plant, at 401-421 North Green street, where he brought about the erection of a modern industrial building with the best of equipment for the handling of the business. In 1905 was erected an addition that doubled the capacity of the plant, and in 1912 it was found necessary to make further addition, with the result that the present modern plant, a substantial five-story building, affords an aggregate floor space of one hundred thousand square feet. In the Chicago factory is retained a force of seventy-five operatives, all skilled in their respective departments of work, and from the Chicago headquarters go forth an efficient corps of fifteen traveling salesmen, who represent the concern through the western, southern and northern territory.

The corporation of Benjamin Moore & Company has built up a national reputation for the superiority of products and for careful and legitimate business policies, and in this connection the following quotations from a catalogue recently issued by the company are specially apropos the same being addressed to the trade: "In drawing your attention to our catalogue, we would say that all goods manufactured by us are exactly as represented, and conforming to the laws which have recently been enacted in many of the states, are being put up in net

weight and full-measure cans. Our plants are being constantly improved and enlarged; our laboratories are continuously engaged in research and experimental work; and the trade may rest assured that the reputation for promptness in execution of orders, fairness in dealings, and the high standard of quality of all our productions which have been the chief characteristics of our business will always remain so."

Benjamin Moore & Company manufacture comprehensive lines of pure oil colors, mixed paints, aluminum paint, floor paints, marine paints, enamels, stains, fillers, varnishes, wall finishes, etc. The company manufactures and makes a specialty of its "Muresco," for wall and ceilings decorations, and statistics show that the sale and use of this product are greater than that of any other similar preparation on the market. "Muresco" is manufactured in eighteen different colors and an equal number of tints, as well as in white for individual tinting base.

LIVINGSTON P. MOORE

President of the company described in the foregoing article, was the founder of the Chicago branch of the business and has had direct supervision of the same from the beginning, besides which he is now the active executive head of the entire business of the company. Mr. Moore was born in the historic old city of Elizabeth, New Jersey, on the 6th of September, 1875.

After effective preliminary discipline he entered Rutgers College, and in this celebrated old institution he was graduated when eighteen years of age. His entire business career has been one of close identification with the paint manufacturing industry, and he has become one of its prominent and influential representatives. In connection with his commercial activities he represents his company in membership in the Chicago Association of Commerce, the Illinois Manufacturers' Association, the American Paint Manufacturers' Association and the Paint & Oil Club of Chicago. In a more purely social way he is affiliated with the Chicago Athletic Association and with the Skokie Country Club. Residence Evanston, Ill.

CHRIST SIEVERS

An unassailable business reputation and definite success pertain to Mr. Sievers, who has developed a very substantial and prosperous enterprise in the manufacturing of high-grade sauerkraut for both the wholesale and retail trade, under brand of home-made sauerkraut. Incidental to the business he has well equipped gardens in which he raises the major part of the cabbage utilized in his manufacturing, and the recognized superiority of his products has enabled him to build up a really noteworthy industrial enterprise, so that he consistently merits representation in this publication. His manufacturing establishment, with the best of sanitary equipment, is at 3605 to 3617 South Laflin Place.

Mr. Sievers was born in the Kingdom of Hanover, Germany, on the 25th of

L. P. MOORE

April, 1861, and is a son of Henry Sievers. The mother of Mr. Sievers died when he was about five years of age and in 1873 the father came with three of his children—Christ, August and Sophia—to America, the expenses of the trip having been defrayed by two other sons and three daughters who had previously come to the United States and who had established their residences in Chicago. Landing in the port of New York city, Henry Sievers came with his three children directly to Chicago, and he was a resident of Chicago at the time of his death, when venerable in years. Christ Sievers had received his rudimentary education in his native land and thereafter he was enabled to attend school in Chicago for one year, so that he was able measurably to advance his knowledge of the English language. The financial resources of the family were limited and thus he became a productive worker when a mere lad, his broader education having been that gained in the practical school of experience. When twelve years of age he found employment with his brother Henry on a farm that was situated near the present crossing of the Chicago Belt Railway and Seventy-first street. He was thus engaged three years, after which he was employed by another of his brothers, on a farm then situated at Seventy-ninth street and Western avenue. His next service was on the little cabbage farm of an Englishman named Peter Platt, at Thirty-sixth street and Ashland avenue. This Englishman showed enough German appreciation and proclivities to prompt him to manufacture sauerkraut from the products of his cabbage farm, and thus Mr. Sievers gained practical experience in the concocting and maturing of the fine German foodstuff. In 1885 he purchased the homestead of Mr. Platt, with a few hotbeds for the raising of cabbage plants, and with this basis he engaged in business in an independent way. From the Robinson estate he leased a neighboring tract of twenty acres and placed the same in commission for the raising of cabbage. He manufactured the products into sauerkraut, and from this modest inception he has built up his present and prosperous business, which stands in distinct evidence of his energy, industry and admirable policies.

In 1912 Mr. Sievers leased the ground on which he erected his present well equipped manufacturing plant, and from the establishment is turned out an average annual aggregate of five thousand barrels of sauerkraut, the greater part of which is sold in Chicago. During the cutting season Mr. Sievers gives employment to about twenty-five persons and he gives a personal and scrupulous supervision to every detail of manufacturing, so that the maximum excellence of product is maintained each successive season.

HENRY L. WEBER

As a wholesale dealer in coal and ice Mr. Weber has developed a large and substantial business, especially in the handling of coal for industrial uses. His office and rail yards are established at 1051 West Thirty-sixth street, in the celebrated Central Manufacturing District of Chicago, and here he has provided the best of facilities for the handling of his large and prosperous business.

In the year 1900 the late John F. Weber established himself in the retail

coal business, with headquarters at the corner of Thirty-ninth street and Ashland avenue. In 1903 he obtained for his enterprise a more eligible location, at the corner of Thirty-fifth street and Ashland avenue, and with the increased facilities here provided he expanded his operations into the wholesale field. The business here expanded in scope and importance and in 1912 Mr. Weber leased at 1051 West Thirty-sixth street a tract of land one hundred and fifty by three hundred feet in dimension, where he equipped with the best of modern facilities the large yard and well constructed buildings for the accommodation of his large volume of business in the handling of coal and ice at wholesale. He continued at the head of the prosperous enterprise until his death, in 1914, when his brother Henry L. purchased the interests of the heirs and assumed full ownership of the well established business, besides making provision for meeting the various minor debts that were outstanding against the business. Henry L. Weber has since continued the business most successfully at the same excellent location and controls a specially large trade in the important Central Manufacturing District. He handles all grades of hard and soft coal but gives special attention to the sale of the Franklin Coal Company's popular grades for the production of steam for industrial and commercial purposes. Since he assumed control of the enterprise Mr. Weber has developed an extensive business also in the handling of ice, both at wholesale and retail. He acquires his superior ice product from the spring-fed Camp and Channel lakes, in southern Wisconsin, and now handles an average of four hundred and fifty car loads of this ice annually.

Mr. Weber, a young man of vigorous initiative and administrative ability, was born at Sturgeon Bay, Wisconsin, where he was reared and educated, and he continued his residence in the Badger state until 1901, when he came to Chicago and entered the employ of his brother, the late John F. Weber, with whom he continued his association until the death of the latter, when he assumed full ownership and control of the substantial business founded by his brother, as noted in preceding paragraphs.

ROBERTSON BROTHERS MANUFACTURING COMPANY

At this juncture is directed attention to a corporation that controls a substantial business in the manufacturing of varied metal products, including eaves-trough, conductor pipe, irrigation pipe, tanks, mill equipment, etc. The trade of the company is principally through the western and central states and occasional shipments are made to South American countries. The company was organized and incorporated in 1909 and bases its operations on a capital stock of $50,000. The personnel of the executive corps is as follows: Robert R. Robertson, president; Fletcher G. Robertson, vice-president; Edward A. Robertson, treasurer; and John C. Dasso, secretary. The plant of this company occupies a substantial two-story building, with an aggregate floor space of thirty-one thousand square feet for manufacturing purposes, with additional warehouse space in the district. Employment is given to about one hundred and fifty persons and direct railway facilities are afforded through the Chicago

Junction Railroad, the manufacturing building having provision for the accommodation of three cars simultaneously in loading and unloading.

The business of the Robertson Brothers Manufacturing Company was initiated in 1908, under partnership relations, and the original headquarters were at the corner of Ashland and Carroll avenues, whence removal was made to the present location, 1306 West Thirty-seventh street, about one year later. Careful and progressive policies have been brought to bear in the development of the business and it is constantly expanding in scope, so that it contributes a definite quota to the commercial prestige of Chicago. More specific mention of the president of the company is made in following paragraphs.

ROBERT R. ROBERTSON

As president of the Robertson Brothers Manufacturing Company, of which record is made in preceding paragraphs, Robert Roy Robertson maintains the general supervision of the business, with all practical details of which he is thoroughly familiar. Mr. Robertson is essentially an aggressive business man, being identified with other business enterprises which have come into prominence largely due to his energies, is a republican in his political proclivities, being a member of the Hamilton Club of Chicago, has become affiliated with the Masonic fraternity in a most appreciative way, through identification with both the York and Scottish Rite bodies, in the latter division of which he has received the thirty-second degree. He is an enthusiast in the manipulation and incidental pleasures of the automobile, and is a member of the Automobile Supply Co., of the Third Regiment Infantry, National Reserve Militia of the State of Illinois.

November 12, 1903, recorded the marriage of Mr. Robertson to Miss Alice Warfield Hayes, her family being of the same line as that of the late Rutherford B. Hayes, nineteenth president of the United States. Mr. and Mrs. Robertson have three children,—Robert Hayes, Lillian Ruth, and Helen Warfield.

THE H. P. SMITH PAPER COMPANY

In its field of commercial enterprise this concern has advanced to a position of representative order and is to be noted as one of the substantial and progressive corporations of the western metropolis. The business was founded in 1901, by Hobart P. Smith, and the original headquarters, at the corner of Carroll avenue and Sacramento avenue, were maintained until 1910, when removal was made to the larger and more eligible quarters now occupied, at 1130 West Thirty-seventh street. The company's present building was erected in that year, is one story in height, with basement, and utilizes a ground space one hundred by one hundred and fifty feet in dimensions, with a spur railroad track that gives direct transportation facilities to and from the building. The business was incorporated in 1913, with a capital stock of twenty thousand dollars,

and the special function of the company is in the manufacturing of wax and oil papers for commercial purposes, the superior character of the products having been the basis on which has been developed the present large and prosperous enterprise and the trade of the company having been extended into all parts of the United States. The officers of the company are as here designated: Clayton W. Sherman, president; Henry W. Pedersen, vice-president; Robert E. Coppinger, secretary and general manager; and S. R. Davis, treasurer. The general manager has shown marked energy and circumspection in the development of the business and is consistently to be noted as one of the progressive and representative business men of Chicago. The plant of the company is thoroughly modern in equipment and facilities and in the same employment is given to a corps of about thirty persons, each skilled in his respective department of service.

MATHIAS KLEIN & SONS

In the manufacturing of tools for electricians, linemen and mechanics, this sterling Chicago concern takes precedence over all others of the kind in America, both in prolonged period of operations and in the scope and importance of business controlled. The enterprise conducted under the firm name noted above had its inception fully sixty years ago, and its development and advancement have kept pace with the marvelous progress of Chicago during the intervening years. This is one of the pioneer manufacturing concerns of the western metropolis, its history has been in every respect admirable, and its status has long been one of prominence in connection with the representative industrial activities of the city. Of such pertinent interest are certain statements that appear in one of the recent and elaborate catalogues issued by the firm that the same are, with but slight paraphrase, deemed specially worthy of perpetuation in this connection:

"From an humble blacksmith shop in 1857 to one of the largest tool-making plants of its kind in the world, is the span in the career of the House of Klein. The firm dates back to 1857, when Mathias Klein, its founder, opened a blacksmith shop within a stone's throw of what is now the heart of Chicago's great loop district. This was a period when line construction was in its infancy and the highly efficient tools of to-day were not dreamed of. With the increasing demand for tools of this kind, Mr. Klein saw the possibilities and gradually concentrated his efforts toward the production of tools for telegraph construction work. As a result Mr. Klein may logically be considered the pioneer in the development of tools for the linemen and electrical mechanics. Practically every notable improvement in tools of this character, from that day to this, has been conceived and inaugurated by the House of Klein. Since the establishment of our business in 1857, it has been our constant aim to produce and offer to the trade efficient tools of dependable quality, and in pursuance of this resolve we have steadfastly refused to make or market inferior goods, which are invariably dear at any price. The soundness of this policy is amply proved by the fact that to-day Klein tools are the universal standard all over the world among linemen, electricians and kindred mechanics. Having built up this vast clien-

tele on quality as a foundation and 'satisfaction guaranteed' as a business policy, we naturally guard with a jealous pride the reputation our goods have attained, and prize it as one of our most valuable assets."

A veritable patriarch of industry is the venerable founder of this now extensive and important Chicago manufactory, who has retained wonderful mental and physical vigor, notwithstanding the fact that in 1916 he attained to the age of ninety years. Even to the present day he maintains an interest in the business which he founded and developed, and he still pays occasional visits to the plant, these visits are a source of great satisfaction to him, ever ready with expert advice and valuable counsel when needed. Concerning the history of the firm of Mathias Klein & Sons, in which three generations of the family are now interested in an active way, there is a wealth of interesting data, and this publication consistently may give further outline of this remarkable record.

In the year 1855, after having been employed as a blacksmith in the city of Philadelphia, Mathias Klein came to Chicago and opened a blacksmith shop. About this time construction of telegraph lines in the various sections of the Union was proceeding vigorously. Linemen of what was then known as the Illinois & Mississippi Telegraph Company found that ordinary pliers and other tools were not suited to their work, and under these conditions they began to avail themselves of the skill of Mr. Klein, who was able to make in his little shop tools of the kind needed. Concerning the attitude of Mr. Klein in this connection the following appreciative estimate has been written: "Mr. Klein not only tried to make their tools as requested but he also sought to give the men stronger tools, and tools that more than merely fufilled their needs. As a result it was not long before the Illinois & Mississippi Telegraph Company, as well as numerous similar companies, became interested in his shop and began to order from him their standard linemen's tools."

In the manufacturing of tools the business of Mr. Klein grew to be an important feature of his business, and the enterprise constantly expanded, so that he was constrained to obtain from time to time larger quarters. At the time of the great Chicago fire of 1871 his shop was on the site of the present Great Northern Hotel, on Dearborn street, and it was entirely destroyed in the ever memorable conflagration. He immediately rebuilt his shop and thereafter he continued operations at that location until 1881. In that year a two-story and basement building was erected on Van Buren street, two blocks west of the river; its ground area was twenty-five by fifty feet, and Mr. Klein believed that here his accommodations would prove adequate for all time. However, additions to the building had to be made from time to time, and by the early '90s its floor space was more than eight times as great as it had been in 1881. Even this proved inadequate, and in 1906 a large additional factory was built, on Clybourn avenue, near North avenue. This sufficed until 1913, when the firm erected its present large and modern plant, a substantial three-story building, with annex wings of less height, at Belmont and Kedzie avenues, where a six-acre tract of land is owned, thus making provision for further expansion of the plant when demanded. From an article that appeared in the Electrical Review & Western Electrician about a year after the new plant had been completed are taken the following excerpts: "Throughout this period of development Mr. Klein sought to make

better tools than specified and to make constant improvements in the products, thus bringing his tools into the favor of all linemen. He has been favored in retaining at all times the personal respect and good will of his employes, some of whom have been in his service more than forty years. The new factory building may be considered as being built in three sections. One of these sections has a ground area of about 13,350 square feet. To one side of this section is located a 55 by 100 foot building, which is utilized as a power house, gas-producer plant, boiler house, etc. The total floor space of the factory is thus about 53,580 square feet. The new plant is modern in all ways, every effort being made to make the same a pleasant and a sanitary place in which to work."

Among the high-grade products of the well equipped manufactory of Mathias Klein & Sons may be noted splicing clamps; combination wire and sleeve clamps; the celebrated Klein pliers in varied sizes and designs, adapted to specific uses; climbers insulation strippers; electrician's pocket tool kits, scissors, knives, wire tweezers, screw drivers, etc.; lag screw wrenches; wire grips; linemen's tackle; tree trimmers and pruning saws; digging and tamping tools, telegraph shovels; pike poles and cant hooks, etc.; wire reels of varied descriptions; tools for cable men; linemen's torch, charcoal furnaces, etc.,—in short the fullest line of equipment for electricians, linemen and mechanics. Special attention may be directed to the Klein belts and safety-straps for linemen, for the same as recognized as the ultimate standard of excellence, the Klein belt and safety strap being tested to withstand a strain of eight hundred pounds before it is placed on the market. The general offices of Mathias Klein & Company are maintained at 562 West Van Buren street, and the firm's export representative is Herman S. Salt, who has his office at 114 Liberty street, New York city.

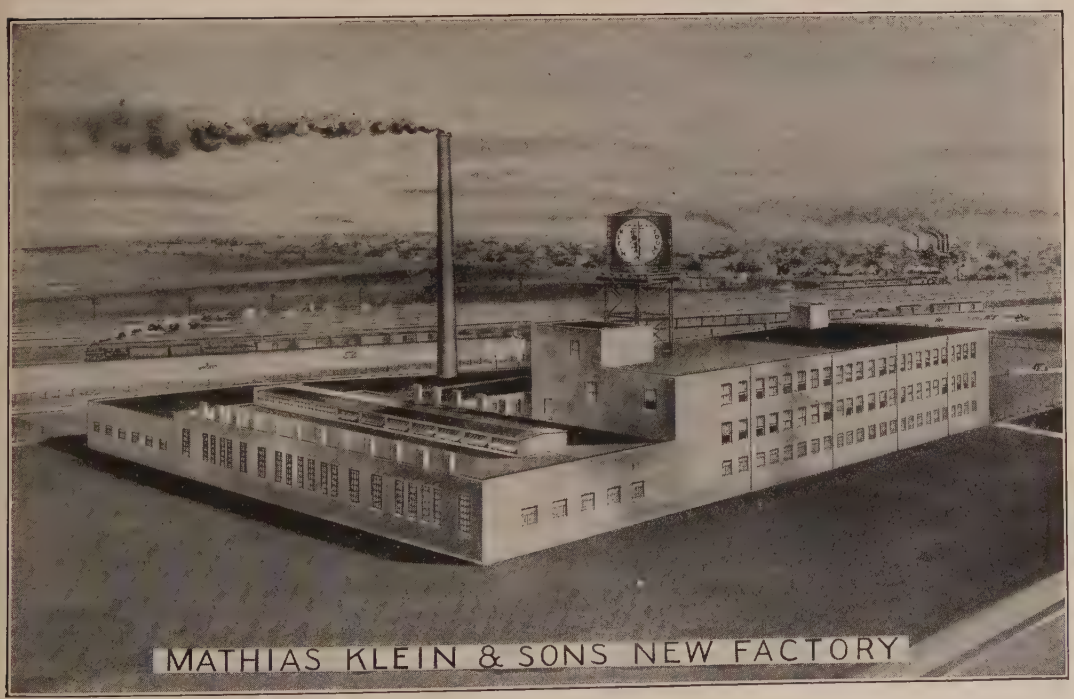
MATHIAS KLEIN

The honored founder of the notable industrial enterprise described in the foregoing paragraphs was born in the ancient city of Worms, Hessen Darmstadt, Germany, and the year of his nativity was 1826, so that he celebrated in 1916 the ninetieth anniversary of his birth. He received in his native land his early educational discipline and there also he served a most thorough apprenticeship to the trade of blacksmith and tool-maker. He was a young man at the time of his immigration to America and he first established his residence in the city of Philadelphia, where he was employed at his trade until his removal to Chicago, in 1855. Of his career since that time the foregoing article gives sufficient outline. It may consistently be said that Mathias Klein proved himself one of the world productive workers and that to him can well be applied the title of captain of industry. A strong, loyal and sane career has been that of this sterling pioneer manufacturer of Chicago, and in all of the relations of life he has stood exponent of the best type of citizenship. In Philadelphia was solemnized his marriage to Miss Mary Herre, and the four surviving children of this union are John M., Lena, Mary and Joseph A., the two sons having early become associated with their father's manufacturing business, as will be

JOHN M. KLEIN

MATHIAS KLEIN

JOSEPH A. KLEIN



MATHIAS KLEIN & SONS NEW FACTORY

noted in later paragraphs. Lena is the widow of Joseph S. Lang and still resides in Chicago, and Mary is the wife of Philip J. Spies, of this city.

JOHN M. KLEIN

John Mathias Klein, was born in Chicago on the 21st of December, 1856, and his early education was obtained in the parochial and public schools. Thereafter he gave close attention to the study of architecture and became a skilled draftsman. The knowledge he thus gained later proved of distinct practical value when he became allied with the business established by his honored father, for he has done most effective service in drafting designs for tools and other products issued by the firm of which he is a member. Applying himself with characteristic energy and zeal, Mr. Klein learned with thoroughness all details of tool manufacturing. He held for a long period the position of general manager of the business of Mathias Klein & Sons but of late years has given much time and study to chemical research work and micro-photography relative to the structure and heat treating of steels.

After leaving school Mr. Klein passed about two years in the employ of Bolton & Zittle, representative architects, and thereafter he identified himself actively with his father's business. In 1883 he was admitted to partnership, under the firm name of Mathias Klein & Son, and later, upon the admission of his brother to the firm, the present title of Mathias Klein & Sons was adopted. In national politics he is aligned with the Republican party but in local affairs he is independent of partisan lines. He holds membership in the Chicago Association of Commerce and is known and valued as one of the representative business men of his native city. Like all other members of the family, he is a communicant of the Catholic church.

On the 24th of May, 1877, was solemnized the marriage of John M. Klein to Miss Mary Dewald, of Chicago, her birth having occurred in New York city. The three children of this union are John Mathias, Jr., Mary Theresa (Mrs. William Osmon) and Alexander Joseph.

John M. Klein, Jr., was born in Chicago on the 8th of April, 1881, and his early educational advantages included those of the public and parochial schools and a well ordered military academy. At the age of sixteen years he was given employment in the factory established by his grandfather, and here he has since continued his activities, his experience having been such as to make him an expert tool-maker and general machinist. He wedded Miss Theresa Schaus, daughter of the late Jacob Schaus, of Milwaukee, Wisconsin, and the three children of this union are Mathias, Dolores, and Marcella.

Alexander J. Klein, younger son of John M. Klein, Sr., has been identified with the business of Mathias Klein & Sons from the time when he initiated his activities after leaving school. He was given a position in the offices of the firm and is now in full charge of the commercial affairs of the business offices of the concern and acting manager.

June 19, 1912, recorded the marriage of Alexander J. Klein to Miss Kathleen C. Brennan, who was born in the city of Cork, Ireland, and who came with

her parents to Chicago in 1907, her father, William A. Brennan, being still a resident of this city.

JOSEPH A. KLEIN

The younger of the two sons of Mathias Klein, the subject of this brief review, was born in Chicago in the year of 1869, and his early educational advantages were those of the Catholic parochial schools. As a vigorous and ambitious youth he entered his father's factory, in which he familiarized himself eventually with every detail of the business, as an expert machinist and toolmaker. It was upon his admission to the firm that the present title was adopted, and for several years he has been the general superintendent of the factory, besides which he has given much time to original research work, as has his older brother. His wife, whose maiden name was Mary Steel, likewise was born and reared in Chicago, Joseph A. being one of their six children. Joseph A., Jr., who represented the third generation of the family to be actively identified with the large and prosperous industrial enterprise of Mathias Klein & Sons, with which he is now serving as assistant factory superintendent, under the direction of his father.

LEE LOADER & BODY COMPANY

The well ordered industrial enterprise conducted by this company was founded in the year 1912 and such was the success that attended operations that the marked expansion of the business made it expedient to effect incorporation, this change having been made in April, 1917, when the company was incorporated under the laws of Illinois and with a capital stock of one hundred thousand dollars. The personnel of the executive corps of the corporation is as here noted: President, Albert P. Lee; vice-president, Stanley E. Bates; and secretary, Morse C. Lee. The company has developed a large and prosperous business in the manufacturing of motor-truck trailers, semi-trailers, dumping bodies, and loaders, and the annual output of the well equipped factory has now attained to an average aggregate of five hundred thousand dollars. On its products the company controls eight valuable patents and has several patents pending.

With only one employe the company began operations in modest quarters at 824 West Thirty-sixth street, whence removal was later made to 1355 South Michigan boulevard. Constantly increasing demands placed upon the facilities of the factory finally led to the occupancy of the present plant, at 2343-50 South La Salle street, where are utilized four buildings that give an aggregate floor area of thirty-five thousand square feet. The company now gives employment to an average force of one hundred and fifty persons, and the trade of the concern has been extended into the most diverse sections of the United States and Canada, besides which an appreciable European export business has been developed.

The type of loaders manufactured by this corporation has become widely

known for its unequalled efficiency, the device comprising a tilting box set on a movable base, so that the loader may be shifted from place to place to be filled with bulk freight, such as coal, sand, etc., and its capacity is such that it can dump from one to five tons of material in a truck in from fifteen to thirty seconds.

The technical and mechanical features are involved in the device manufactured by the company for placing on a truck and effecting with equal facility the unloading of the vehicle. All products manufactured are of the best workmanship and material and efficiency in operation has proved the best method of advertising exploitation for the high-grade products.

STANLEY E. BATES

Stanley E. Bates, vice-president of the Lee Loader & Body Company, of which mention is made in a preceding article, has been a resourceful factor in effecting the development and upbuilding of the substantial industrial enterprise conducted by this corporation and was one of the founders of the business. He is a progressive and vital business man of the younger generation in the western metropolis and also one of distinctive technical and executive ability.

Stanley Edward Bates was born at Sterling, Illinois, on the 20th of December, 1887, and is a son of Curtis and Guinniefred (Pryse) Bates. His early educational discipline was obtained in the public schools and in Morgan Park Academy, at Morgan Park, one of the attractive suburbs of Chicago. Thereafter he attended the Leal School, at Plainfield, New Jersey, and finally he entered historic old Columbia University, in the city of New York. In this institution he was graduated as a member of the class of 1909, with the degree of Bachelor of Science, and later he had the distinction of receiving the same degree from the Massachusetts Institute of Technology, in the city of Boston. Thereafter he gained practical experience as a civil engineer and later became one of the principals in establishing the important industrial enterprise now conducted by the Lee Loader & Body Company, of which he has been vice-president from the time of its incorporation, in the spring of 1917.

In the Masonic fraternity Mr. Bates' maximum York Rite affiliation is with Englewood Commandery, No. 59, Knights Templars, and he is affiliated also with Ausar Temple, Ancient Arabic Order of the Nobles of the Mystic Shrine, in the city of Springfield, Illinois. He is an active member of the Mystic Athletic Club of Chicago, and he is identified with the American Society of Civil Engineers, the American Society of Automobile Engineers, the Western Society of Engineers and other respresentative organizations of technical order.

OTTO RABE

Holding well earned prestige as the executive head of one of the oldest and largest pattern-making concerns contributing to the industrial supremacy of

Chicago, Mr. Rabe is not only the owner of the substantial and representative business conducted under his individual name, at 158-62 North Desplaines street, but is also secretary and treasurer of the Kedzie Foundry Company.

As a skilled patternmaker of broad and varied experience and high local reputation, Mr. Rabe established his independent business in the manufacturing of patterns and models on the 1st of January, 1892, his original shop having been located in a building at the corner of Randolph and Desplaines streets. In the initial stages of his operations he retained a force of only three employes, and he continued the busines at the location mentioned for a period of six years, at the expiration of which he removed to his present plant, which utilizes four thousand eight hundred square feet of floor space and which has the best of modern facilities for the effective production of patterns and models for all manner of industrial purposes. Here the equipment is such as to make possible the prompt production of metal and wooden patterns and models of all kinds and also for the efficient prosecution of experimental work in the developing of inventions submitted by clients, this being one of the important departments of the substantial business. Within the period of more than a quarter of a century during which he has been independently established in business Mr. Rabe has done all the work required in his line by many of the leading manufacturing concerns of Chicago, and among the representative concerns thus represented on his clientele may be noted the following named: International Harvester Company, Morgan & Wright Company, Dusenberg Motors Company, Allis-Chalmers Company, Locomotive Super-Heater Company, Illinois Steel Company, American Brake & Foundry Company, Masters Motor Truck Company, Power & Mining Machinery Company, and the Westerman Bakers' Machinery Company. The supporting patronage of these and hundreds of other important industrial firms and corporations attests more emphatically than mere words the technical ability of Mr. Rabe, the efficiency of service given by his pattern works and also the high standing which is his as a reliable and honorable business man. He now gives employment to an average force of twenty skilled mechanics, and it may be stated, with no measure of exaggeration, that the major number of the present employing patternmakers of Chicago have previously been employed in the Rabe establishment. Mr. Rabe is known also for his exceptional inventive genius and he has utilized the same, principally in aiding in the developing and perfecting of inventions brought to him for this purpose by his representative contingent of patrons, whose implicit confidence he has always retained under these confidental relations. He has brought an active, well poised mind to the problems of factory management and efficiency, and has brought his establishment up to the highest standard in economic production and effective directing policies.

On the 1st of May, 1915, Mr. Rabe effected the organization of the Kedzie Foundry Company, and he still retains a controlling interest in the substantial industrial enterprise conducted by this company, which was incorporated under the laws of Illinois and whose original charter provided for a capital stock of $15,000, raised to $50,000, January 1, 1918, having recorded the raising of the capital stock to one hundred thousand dollars. August Erlanson was associated with Mr. Rabe in the organization and incorporation of this company and from the beginning has been the efficient President and general manager of the

foundry and business. The foundry plant is one of the most modern in Chicago and is situated at the corner of West Thirtieth street and Kedzie avenue, the main building being forty by three hundred and twenty-five feet in dimension, and an adjunct building is forty by one hundred and twenty-five feet in dimensions. The company's plant has a ground area of forty-four thousand square feet and the foundry is provided with a direct railroad switch track on either side. The equipment throughout is of the most approved modern type, a force of one hundred and twenty skilled employes is retained, and the annual output has now attained to an average valuation of four hundred thousand dollars. In this model foundry are produced chrome-nickel and semi-steel casting, a specialty being made of the smaller type of castings, but the provisions being such that castings weighing up to four thousand pounds can be turned out with facility and expedition. The company's books show a large and representative list of patrons and among the more important concerns thus recorded may be noted the following named: Locomotive Super-Heater Company, Union Drop Forge Company, Wolf, Sayre & Heller Company, Dusenberg Motors Company, and the Booth-Hall Company. The Kedzie Foundry Company's plant is considered in local industrial circles as being one of the finest in Chicago and is specially notable for the efficiency of its service.

Mr. Rabe was born at Port Washington, Wisconsin, on the 21st of June, 1857, and is a son of Carl Rabe, who was a machinist and blacksmith by trade and vocation and who came with his family to Chicago when his son Otto was a lad of eleven years. Thereafter the subject of this review made good use of the advantages afforded in the public schools of this city, besides which he thereafter completed technical courses in drafting, designing, etc. As a youth he was for a time in the employ of Schultz Brothers, manufacturers of furniture, and he then entered a furniture factory and learned the wood-working trade in all of its phases. Thus he was well fortified when he established, on a modest scale, the independent enterprise from which has been developed the large and important patternmaking business which he now owns. Mr. Rabe has been an influential member of the Chicago Patternmakers' Employers Association from the time of its organization, has served as president of the same and in 1918 he is its vice-president. He is affiliated with the Masonic fraternity and he and his family reside in the beautiful little suburban city of Wilmette.

THE THISTLE MANUFACTURING COMPANY

The trend of modern industrial and economic progress has not been deflected from a course that has involved the development of many valuable inventions that conserve facility and economy, besides lightening the burdens of domestic operations of the household. The company whose title initiates this paragraph has made a most valuable contribution in this important field, and it may be said without fear of legitimate contradiction that the company manufactures the best and most complete line of washing machines of all similar concerns in America. From a bulletin issued by the company are taken the following pertinent statements: "We have made everything subservient to quality and

usefulness, and by the use of selected materials, improved machinery and skilled labor we have made the name of our machines standard for quality wherever washing machines are made. Our success is due to the patronage and confidence shown us by our customers, and we are thoroughly appreciative of the fact that confidence is gained and maintained only through merit * * * The 'American Beauty' and the 'Up-to-Date' washing machines bear the distinction of being the most widely imitated family washing machines on the market. This distinction, however, proves their worth. Worthless things are never imitated. These machines are originals,—the outcome of many years' experiments; they have revolutionized washing-machine construction and proved to be the greatest labor-saving machines ever invented. They became popular because they helped the physically weaker member of the household to perform a disagreeable task in a better and easier way." It may further be said that the company manufactures machines available for operation either by electricity or hand power and that in both lines the products represent the ultimate of efficiency. In this circumscribed article it is impossible to enter into details concerning the various models, and information of this order is afforded through the catalogues and brochures, pamphlets and bulletins issued by the manufacturers and readily available to all who make application for such information.

The Thistle Manufacturing Company was organized and incorporated in the year 1906 and the nominal capital stock at the time of incorporation was but twenty-four hundred dollars, the interested principals having been Andrew B. Christenson, who became president of the new corporation, and August Clausen, who became secretary and treasurer. The company began, on a modest scale, the manufacturing of the hand-power washing machine to which was given the title of "Up-to-Date," the same having been invented by William Rutwen, who obtained a patent on the mechanism in the year 1904. After the lapse of six months, however, Mr. Rutwen sold his interest and his patent and The Thistle Mfg. Co. was incorporated.

The first manufacturing plant of this now important corporation was established in small quarters at the corner of Carroll avenue and Union Park Place, and the first year the company manufactured three hundred machines, which were sold to jobbers and private families. The original factory utilized only one thousand square feet of floor space and the first year only four persons were employed. In 1907 the company removed to its present location, at 325-29 North Curtis street, where is utilized a modern industrial building that gives to the factory an aggregate floor area of ten thousand square feet and where the force of employes now numbers about twenty, the most of them being skilled mechanics. Until 1911 the corporation confined its operations to the manufacturing of hand-power machines, but in that year it initiated the manufacturing also of the "Up-to-Date" home electric washing machines, with stationary wringers. This machine met with such favorable reception that the business of the concern expanded rapidly in scope and importance. Over half a million of the various washing machines manufactured by this company have been distributed throughout the United States. In June, 1917, a further improvement in the machines was effected, in the manufacturing of the swinging wringers as an adjunct, the same being operated by electric power. In October of the same year Mr. Christenson, original president of the company, sold his interest to his associate, Mr.

Clausen, who has since been president, his son Walter being secretary and Mrs. Christine Clausen, wife of the president, being the vice-president of the company.

AUGUST CLAUSEN

August Clausen, president of the Thistle Manufacturing Company, of which description has been given in the foregoing paragraphs, is consistently to be designated as a progressive captain of industry in the great metropolis of the west. He was born in Jutland, Denmark, April 25, 1860, and was reared and educated in his native land. In 1884, as an ambitious and self-reliant young man of twenty-four years, he came to the United States and he passed the first year in Vermont. In 1886 he made his initial visit to Chicago, and thereafter he was for several years employed as a grocery clerk in the state of Wisconsin. There he made the acquaintance of William M. Hoyt, a prominent wholesale grocer of Chicago, and this representative business man tendered to Mr. Clausen a position in the wholesale grocery establishment of the W. M. Hoyt Company. For two years Mr. Clausen continued in the service of this Chicago concern and for the ensuing two years he was in the employ of Reid, Murdoch & Company, another of the important wholesale grocery houses of Chicago. He then accepted a responsible position with the grocery house of the Henry Horner Company, with which he continued his alliance for sixteen years, at the expiration of which he resigned his position to become one of the organizers of the Thistle Manufacturing Company, of which he is now president. He landed in New York city with his financial resources reduced to seven cents, and it has been through his own ability and well directed efforts that he has won place as a prosperous and representative manufacturer in the city of Chicago. He is a citizen of utmost loyalty and public spirit. In politics he maintains an independent attitude and in a fraternal way he is actively affiliated with the Independent Order of Odd Fellows, in which he has passed the various official chairs of the lodge.

In the year 1892 was solemnized the marriage of Mr. Clausen to Miss Christine Ravens, of Chicago, she having been born in Germany. They have two sons: Walter, who was born in 1896 and who received the advantages of the public schools of Chicago, was for several years in charge of his father's ranch in South Dakota, but since October, 1917, he has held the office of secretary of the Thistle Manufacturing Company. Harold, the younger son, was born in 1899, was afforded the advantages of the public schools of Chicago.

BRUGOVICZKY MANUFACTURING COMPANY

On the 14th of August, 1917, through purchase, this corporation succeeded to the ownership of the manufacturing plant and business of the Zenith Tool & Machine Works, and the interested principals in the progressive company are Emerich Brugoviczky, Frank B. Brugovizky and John Dann. The concern,

with the best of equipment and general facilities, is engaged in the manufacturing of all kinds of high-grade tools, dies, jigs, gauges, etc., and in the designing and constructing of automatic and other types of machinery utilized for industrial purposes. The company also gives expert attention to the developing of inventions and to confidential work in assisting manufacturers in the devising of tools, machinery, etc., for the insuring of greater economic efficiency and producing better results in manufacturing methods and processes. The company, in this important department of its enterprise, is constantly being called upon for advice and assistance by various large industrial concerns in Chicago, and its principals and other experts are well equipped for the solving of all manner of mechanical problems. The factory of the company, at 127 North Wells street, is unexcelled in its equipment of modern machinery, tools, apparatus and accessories for the producing of all kinds of metal contract work, and among the many large and important concerns represented on the list of appreciative clients may be mentioned the Moline Plow Works and the firm of Rost & VanDervoort, both of Moline, Illinois, and the Stewart Manufacturing Company, of Chicago.

FRANK B. BRUGOVICZKY

Frank B. Brugoviczky was born in Buda-Pesth, Hungary, February 6, 1874, and after completing the curriculum of the public schools of his native city he took special curses in technical schools, after which he served a three years' apprenticeship to the trade of toolmaking. As a skilled artisan he was thereafter employed in various factories in his native land and for an appreciable period also he was employed in the city of Paris, France. For four years he was foreman of the tool department in an ammunition factory at Csepel, Hungary, and in 1906 he came to the United States and established his residence in Chicago. For three and one-half years thereafter he was here employed by the Kellogg Switchboard & Supply Company, and he was then tendered and accepted a responsible position in the great establishment of the Western Electric Company. Later he accepted the offer of a more remunerative position with the Addressograph Company, with which he continued his association two and one half years. Thereafter he was employed as an expert workman in the factory of the American Can Company, and his final incumbency before engaging in business in an independent way was that of inspector and checker of the tool room of the Stewart Manufacturing Company. He is well and favorably known as an authority in toolmaking, tempering of metal, etc., and is making for himself secure place as a successful business man in the western metropolis. He is affiliated with New Chicago Lodge, No. 506, Independent Order of Odd Fellows and with Germania Lodge, No. 182, Ancient Free & Accepted Masons.

EMERICH BRUGOVICZKY

Emerich Brugoviczky, older brother of Frank B., mentioned in the preceding article, was born in Buda-Pesth, Hungary, on the 21st of August, 1868. He

took courses in mechanical drafting and allied work in leading technical schools in his native city. A three years' apprenticeship made him a master workman at the trade of toolmaker and in Hungary he was employed three years in shops, manufacturing railroad locomotives. For two years thereafter he was employed in an establishment in which locomotives were assembled, and his next service, of four years, was as a machinist in an Hungarian navy yard, where he gave his attention to the making and assembling of naval torpedoes. He next passed a year as toolmaker in a sewing-machine factory, and for five years he was employed in munition factories,—three years in the great works at Essen, as lathe-room foreman, and two years thereafter found him employed in factories in the city of Paris, France.

In 1903 Mr. Brugoviczky came to America and forthwith made his way to Chicago, the industrial center which he had determined to make his stage of activities. For the ensuing two years, however, he was employed in the lathe-room of the plant of the American Can Company in the suburban town of Maywood, and he then held for three years a responsible post as maker of thread-gauges and forming tools for the Western Electric Company. He then went to Portland, Oregon, where for three years he was employed by the Hydraulic Elevator Company, after which he returned to Chicago and soon assumed a position in the plant of the Shonk Manufacturing Company, at Maywood. Later he was employed in turn by the Hahl Electric Clock Company (now the Time Systems Company), the Electric Metals Company and the Hardware Specialty Manufacturing Company, his service being in each instance that of tool and die making. He next passed a year in the employ of the Krasberg Manufacturing Company, in charge of special finishing, forming tools and thread-gauge, and he resigned this position to accept one with the Steward Manufacturing Company, with which he remained until 1907, when he became one of the organizers of the Brugoviczky Manufacturing Company, as noted in a preceding article descriptive of this concern. His fine technical ability has been reinforced admirably by his wide and varied experience and both he and his brother are recognized experts in the field of enterprise in which they are successfully directing their activities. Mr. Brugoviczky is an energetic and progressive business man, brings to bear in his present enterprise the best of business ethics and has the confidence and good will of all who know him. He is affiliated with various social organizations in the city of his adoption, including New Chicago Lodge, No. 506, Independent Order of Odd Fellows.

FRANCIS L. STETSON HARMAN

From a barren prairie to a highly developed industrial district is briefly the story of the Central Manufacturing District of Chicago. The review of this manufacturing center, by Mr. Harman, is of interest to all Chicagoans and the story of the progress that has been made in this section of Chicago will undoubtedly reveal to many not closely identified with industrial matters, an achievement little short of marvelous.

Prior to 1908 very little progress had been made in the development of this

district. In the summer of 1908 the management and operation of the Central Manufacturing District was placed in the hands of Mr. H. E. Poronto, then secretary and purchasing agent of the Chicago Junction Railway and the Union Stock Yard and Transit Company, now the vice-president of both companies. Mr. Poronto immediately planned in detail the future development of this district and the success that has attended his efforts is evidence of his abilities.

Mr. Harman joined the Central Manufacturing District organization at the time Mr. Poronto took over the duties of Industrial Agent and has been Mr. Poronto's assistant since that date.

Mr. Harman was born at Castleton, Rutland county, Vermont, on August 20, 1883. His early education included a four course at historic old Phillips Exeter Academy, at Exeter, New Hampshire, from which institution he graduated in 1904. Choosing the legal profession he was for one year a student in the law department of Union University, at Albany, New York, and was admitted to the bar of Vermont in 1905. For two years thereafter he practiced law at Vergennes, Vermont, and in 1907 came to Chicago where he was soon afterward admitted to the bar of Illinois. Within a few months after coming to Chicago Mr. Harman took a position with the Central Manufacturing District. This district has a distinct organization but is allied with the interests of the Chicago Junction Railway Company and the Union Stock Yard and Transit Company. Mr. Harman is also Assistant Secretary and Tax Agent of these two companies. He has been a member of and has served as Secretary of the Central Manufacturing District Club since its organization in 1912. Mr. Harman belongs to the legal fraternity of Phi Delta Phi. He was married in 1909 to Miss Mary A. Millington of West Medford, Mass., and they have one child, Stetson B. Mr. Harman's home is in Wilmette.

MILES J. VOTAVA

One of the progressive and representative business men of the younger generation in Chicago, Mr. Votava is president of the Hibner Oil Company, which controls a substantial business in the handling of the various petroleum products, and he is also secretary and treasurer of the New Process Refining Company, which was organized in May, 1916, operating an up to date refinery and crockery plant at Joliet, Ill.

Miles J. Votava has been a resident of Chicago from his infancy and here he has found a productive stage of activity as a vigorous and resourceful young business man. He was born in Bohemia, on the 11th of November, 1887, and in 1890 his parents immigrated to America and established their home in Chicago, where they still reside, the father, Filip Votava, having here established himself in the wholesale bakery business and being still actively engaged in this line of enterprise. After having duly profited by the advantages of the public schools of Chicago Miles J. Votava entered the Metropolitan Business College, and in this institution he was graduated as a member of the class of 1902. For the ensuing three years he held a position in the office of the Cole Manufacturing Company, and the ensuing two and one-half years found him as a department

F. L. STETSON HARMAN

manager in the jobbing establishment of T. J. Peterson & Company. He finally resigned this position to engage in the brokerage business in an independent way, but four years later, at the solicitation of Edward J. Hibner, he discontinued his brokerage business to assume the position of general manager in the offices of the Hibner Oil Company. Eighteen months later he purchased Mr. Hibner's interest in the business and he has since continued as the energetic, resourceful and progressive president of the company.

Mr. Votava is vice-president of the St. Vincent de Paul Society of Chicago, holds membership in the Rieger Club, Petroleum Club and the Chicago Paint & Varnish Club, and is affiliated with the Knights of Columbus, both he and his wife being communicants of the Catholic church.

The year 1908 marked the solemnization of the marriage of Mr. Votava to Miss Marie Zalud, and they have two sons, James and Joseph.

THE FRED G. CLARK COMPANY

The unqualified priority of Chicago as a distributing center has not lacked for appreciation on the part of important corporations in other states of the Union and many of the same have established western distributing headquarters in the western metropolis. Among the number of such institutions that lend additional prestige to Chicago along commercial lines is that of the Fred G. Clark Company, which controls an enormous volume of business in the manufacturing and refining of petroleum and its products and in the wholesale dealing in heavy chemical. The trade of the company has been extended into all sections of the United States and Canada, and a large export trade in European countries has been developed prior to the great war that is ravaging that division of the world. The Chicago headquarters, at 1031-43 West Thirty-seventh street, utilize a substantial one-story building that is eighty by two hundred and seventy feet in dimensions, and in connection therewith are provided facilities for the storage and tankage of one million gallons. The refinery of the company is established at Warren, Pennsylvania, and the crude petroleum is obtained from the Pennsylvania and Oklahoma fields. The general offices of the company are in the city of Cleveland, Ohio, under the laws of which state it is incorporated, and the executive officers are: W. E. Wall, president; T. E. McArdle, vice-president; R. J. Wall, treasurer; and F. I. Harding, secretary.

THOMAS E. McARDLE

The vice-president of the Fred G. Clark Company, of which record has been given in the preceding paragraph, was born in the city of Cleveland, Ohio, on the 22d of September, 1873. He received in his native city excellent educational advantages and his original service in connection with the business of the Fred G. Clark Company was in the capacity of office boy in the Cleveland headquarters. Energy and efficient service brought to him advancement, with inci-

dental and constantly expanding knowledge of the details of the business, and he filled in turn various positions in connection with the different departments. Thus is may be noted that for a time he was order clerk, that later he had charge of compounding, the supervision of the analysis of oils, and finally became a traveling salesman for the company. In 1902, upon the establishing of the Chicago branch, he was made western manager, with headquarters in one room in the Marquette building and with a formidable office force composed of one stenographer. Initiative and executive ability came effectively into play and the business in his jurisdiction expanded rapidly in scope and importance. In November, 1908, the Chicago branch, of western headquarters, was established in the present building in the Central Manufacturing District, with the best of facilities for the handling of all departments of the business, including the specially excellent transportation advantages afforded by the Chicago Junction Railway, which has connection with all railroad lines entering the city. In addition to having the active supervision of the Chicago headquarters with the extensive business emanating therefrom, Mr. McArdle also has direction of the branch office established in the city of Minneapolis and Tulsa, Oklahoma. In covering the trade territory of his jurisdiction six well qualified traveling salesmen are employed, and in the Chicago offices twelve competent assistants are retained, the while the corps of warehouse employes in the Chicago and Minneapolis headquarters numbers twenty-four men.

Mr. McArdle is known and valued as one of the vigorous and progressive business men of the younger generation in Chicago, and holds membership in the Illinois Athletic Association, the Flossmoor Country Club, the Central Manufacturing District Club, and the Chicago Petroleum Club.

In 1901 was recorded the marriage of Mr. McArdle to Miss May E. Bushnell, of Peoria, Illinois, and they have five children,—Thomas A., James E. and Paul P., who are twins, and Lucille J. and Mary Louise. The family home is at 7201 Princeton avenue.

OTTENHEIMER & COMPANY

As manufacturers of duck clothing and importers of linens this corporation has developed a large and prosperous business that contributes its share to the commercial preeminence of Chicago, and its well equipped establishment is located at 532 South Throop street. The business is now incorporated under the title above noted and the corporation is the successor of the firm of Lang, Evans & Company, which was organized in 1896 and of which David M. Ottenheimer, president of the present company, was a member. In 1901 a reorganization took place and the present title was adopted. Upon incorporation operations were based upon a capital stock of thirty thousand dollars, and the concern now has a surplus or reserve fund of twenty thousand dollars, David M. Ottenheimer being president of the company; S. Leppel the treasurer, and J. Binswanger the secretary. The manufacturing and office headquarters of the company utilize an aggregate floor space of thirteen thousand five hundred square feet, all departments are modern in equipment and facilities, and a corps of about sixty-five employes is retained. The trade of the concern,

based upon superiority of products and upon fair and honorable dealings, now extends into virtually all parts of the Union, and the annual sales have reached an average aggregate of about two hundred and twenty-five thousand dollars. In following paragraphs is given a brief review of the career of the president of this vital and progressive corporation.

DAVID M. OTTENHEIMER

The president of Ottenheimer & Company has shown the energy and progressiveness that are signally typical of the representative business men of the western metropolis, in which city he has maintained his home since he was sixteen years of age. Mr. Ottenheimer was born in the historic old town of Göppingen, situated in the central part of the Kingdom of Wurttemberg, Germany, and the date of his nativity was January 31, 1869. He is a son of Morritz Ottenheimer, who was a resident of Göeppingen at the time of his death.

To the excellent schools of his native land Mr. Ottenheimer is indebted for his early educational discipline, which included that of the gymnasium, which corresponds to the high school of the United States. At the age of sixteen years he came to Chicago and entered the employ of Kohn Brothers, who at that time were the largest wholesale manufacturers of clothing in the city. After holding for three years the position of stockkeeper in the establishment of this firm Mr. Ottenheimer accepted a similar position with another representative Chicago firm engaged in the same line of business. Later he became a traveling salesman for this concern, and he continued his vigorous and productive activities in this capacity for a period of about seven years. In 1896 he was the dominant factor in effecting the organization of the firm of Lang, Evans & Company, of which he became a member and which engaged in the manufacturing of white duck suits for men and also in the importing of linens. The firm began operation upon an extremely modest scale and with an available capital of only twenty-one hundred dollars. From this inception has been developed the large and important business now controlled by the succeeding corporation of Ottenheimer & Company, the concern being the largest of its kind in Chicago and much of its progress and success being due to the well-ordered policies and careful direction of its president, Mr. Ottenheimer. He is a loyal and public-spirited citizen of Chicago, is affiliated with the Masonic fraternity and holds membership in the Idlewild Country Club, his chief recreation during the season being through the medium of golf.

THE NATIONAL JACK & MANUFACTURING COMPANY

The marvelous development of the automobile industry has carried in its train a large and important opportunity for the successful upbuilding also of many adjunct manufacturing and supply enterprises, and among the important Chicago concerns that has profited fully by such opportunity is the company

whose title initiates this paragraph and whose well equipped manufacturing plant is established at 130-134 South Clinton street. This company has developed a prosperous and far-extended business in the manufacturing of automobile jacks and accessories, including an improved steel-bar rack jack, the Baby National jack, the No. 1 Sturdy jack, the National tire saver, the Alrite screw jack, a great variety of tire tools, including wrenches and lifters; also lamp brackets of varied types, dash brackets, All-in-One valve tool, spark-plug wrenches, and a specially designed and popular device known as the Two-in-One license holder and radiator support.

The business of this company dates its inception from the year 1907, and its founder was Andrew J. Oliver, who continued the enterprise in an individual way until 1910, when the business was incorporated under the present title and with the following named officers: Andrew J. Oliver, president; John G. Glaze, treasurer; and A. J. Killander, secretary. Under this executive control the business was continued until 1915, in November of which year the plant and business were sold to M. S. Sickle and H. G. Prigge, who effected a thorough reorganization and placed the enterprise upon a substantial and amplified basis. The one inconsistent action taken at this time was placing in charge of the business a young man who had but recently left school and who had no technical training. Owing to this dispensation the success that attended operations was distinctly negative and it became necessary to make a readjustment of radical order. In December, 1916, Mr. Sickle sold his interest in the business to the present stockholders and the practical management of the enterprise was vested in H. G. Prigge, who had previously been identified with the automobile accessories trade for a period of about seven years and who forthwith infused vigor and efficiency in the conduct of the business, the success of which now became assured. In evidence of the consistency of the above statement it may be recorded that under the regime of Mr. Prigge the business of the company for the month of March, 1917, was fully equal to the total of sales represented for the entire year 1916. The products of the well equipped factory are sold directly to automobile manufacturers and jobbers and each month records an appreciable expansion of the business. In the manufactory, which utilizes thirty-five hundred square feet of floor space, employment is given to an adequate force of skilled mechanics and the average output is a ton of castings per day, with a capacity for the output of three tons without increasing the equipment of the plant. The present officers of the company are as here noted: B. T. Kapsa, president; W. Worth, vice-president; and H. G. Prigge, secretary, treasurer and general manager.

H. G. PRIGGE

H. G. Prigge, secretary, treasurer and general manager of the National Jack & Manufacturing Company, was born at Weaver, Wabasha county, Minnesota, in 1875, and in his business career he has fully exemplified the progressive spirit of the west. He profited fully by the advantages of the public schools of his native commonwealth and thereafter completed a special classical course in the University of Minnesota. Since his residence in Chicago has been closely identi-

fied with the business of handling automobile accessories. He is one of the alert and resourceful business men of the western metropolis, is a member of the directorate of the Matidor Tire & Vulcanizing Company, is an active member of the Chicago Sales Managers' Association and the Chicago Automobile Club, and is affiliated with the Masonic fraternity, including the Mystic Shrine.

SAMUEL OLSON & COMPANY

Under the above title is conducted an industrial enterprise that has grown to be one of the most important in its specific productive field to be found within the length and breadth of the United States and that makes definite contribution to the commercial precedence of Chicago. As engineers, manufacturers and contractors this firm maintains its substantial and modern manufacturing plant at 2418-22 Bloomingdale avenue, and here are manufactured the most improved types of elevating and conveying machinery for the handling of all kinds of material or merchandise, a specialty being made of the installation of complete conveying plants, and the engineering department having the best of facilities for the making of plans for such complete plants, the firm thereafter manufacturing the machinery and completing the erective work. The firm has secured patents on many of the improved mechanical devices which are manufactured in its finely equipped industrial institution, and special attention is constantly to be directed to the remarkable and efficient "Subveyors" which are manufactured and installed by the firm, this name being registered and the device having been patented June 18, 1915, besides which other patents are now pending on improvements that have since been made in the mechanism. Of the Olson Subveyors there are two types—one to handle loose articles for deliveries in department stores, and one to handle trays with dishes or food in hotels and restaurants. The Olson Subveyor has proven indispensable in libraries, newspaper and publishing plants for the distributing of books, papers, magazines, etc. The firm manufactures patented elevators for the handling of all kinds of packages, horizontally or vertically, and on this valuable mechanism patents have been granted under dates of April 13, 1915, and September 5, 1916. The output of the factory includes pivoted tray elevators, bucket elevators, belt conveyors and general power transmission machinery. Of the manifold mechanisms that are manufactured by this representative Chicago concern may be mentioned steel or wood apron conveyors, for use in warehouses or stores and also for the transfer of coal, sand, gravel, stone and other materials; standard elevating devices for the handling of boxes, barrels, kegs, sacks, etc.; automatic conveyors, for floors of buildings; hand-power disappearing ash-lifts, for stores, offices and apartments, and also ash hoists of similar order but operated by electricity; spiral conveyors with steel or wood boxes; belt conveyors for the conveying of all kinds of material, as well as boxes; and the various appliances that go to make up the celebrated and widely used Olson system for sifting, blending, weighing and conveying flour, this mechanism having been adopted in many of the largest bakeries in the country and having in facility and efficiency of operation absolutely no rival worthy of consideration. It is not the province of this publi-

cation to enter into technical details or comprehensive description concerning the output of the various manufacturing institutions here represented, but it may consistently be said that in its special field of production the firm of Samuel Olson & Company takes precedence over all similar concerns in the United States. Its high-grade and unique elevating and conveying machinery is in commission in many of the greatest industrial and commercial institutions of the country, and the same holds good in connection with the appliances made for use in hotels, restaurants, etc.

Like many another Chicago industry that has become one of great scope and importance, that controlled by Samuel Olson & Company had a modest inception. The business was founded in 1901, by Samuel and Nels Olson, who initiated operations under the title of Olson Brothers & Company, their original factory having been a basement room twenty-five by sixty feet in dimensions and located in a building at the corner of Austin avenue and Carpenter street. The patronage demand that attended the introduction of the new and remarkably efficient appliances manufactured by the firm made it necessary at the end of one year to obtain larger producing quarters and increased mechanical facilities. Under these conditions the factory was removed to a building on Sangamon street, between Austin and Grand avenues, and there operations were continued on a constantly expanding scale for the ensuing seven years. The firm then purchased ground on Bloomingdale avenue, just to the west of Western avenue, and here was erected a modern industrial building that had been designed specially for the purpose of which it was to be applied, this building being two stories in height and fifty by fifty feet in dimensions. Continued expansion of the business has since necessitated the erection of another factory building adjoining and supplementing the original structure this latter building likewise being two stories in height and its lateral dimensions being seventy-two by eighty-two feet. The firm owns sufficient vacant land adjoining the plant to meet future demands for the enlargement of the factory and the construction of warehouses. The plant is equipped throughout with the most improved machinery and modern facilities for the production of all kinds of conveying machinery, to the designing, improving and construction of which the firm has given close and effective attention during the entire period of its existence. Samuel Olson has been granted fifteen patents upon inventions which he has personally perfected in the line of conveying and subveying machinery, and four of these inventions are of maximum importance.

In 1913 the original partnership organization gave place to one of corporate order, the business having been incorporated under the laws of Illinois and with a capital stock of thirty-five thousand dollars. Under the corporate charter the corps of executive officers since that time has been as here designated: Samuel Olson, president; Nels Olson, vice-president; and Peter Olson, secretary and treasurer, he being a son of the president of the company.

The company employs a large staff of specially skilled machinists and in the general engineering department eight efficient draftsmen are constantly engaged. As contractors in the installation of machinery manufactured by the concern the company has large corps of assistants, and in the outside erecting and installing corps it frequently is necessary to employ two hundred or more men. The company does such direct installation work in all parts of the Union, branch

SAMUEL OLSON

SAMUEL OLSON & COMPANY

offices being maintained in St. Louis, Los Angeles and Pittsburg and special representatives giving supervision to the company's business in other important industrial centers.

One of the important phases of the business of this Chicago corporation is that pertaining to the installation work which it has for several years conducted for the United States Postoffice Department for which Olson elevating and conveying machinery has been installed in postoffices in leading cities throughout the Union. At the closing period of the year 1917, marked by the nation's vigorous preparation for participation in the great European war, Samuel Olson & Company are working on an important contract for the war department—involving the placing of equipment in the United States arsenal at Rock Island, Illinois. Samuel Olson & Company have also assumed recently a contract for installing of conveying systems in the great new factory that is being erected in Maywood by the American Can Company, at a cost of fully three million dollars. The remarkable elevator and conveying mechanisms and machinery of this company are in use in many of the most important commercial and industrial institutions in Chicago and other cities, and among the more notable concerns for which such service has been given in Chicago may be mentioned Sears, Roebuck & Company, where they have about three hundred conveyors in operation ranging in lengths from ten to three hundred and fifty feet, and up to 48 inches wide, handling everything in merchandise from single sheets of paper to baskets and boxes weighing several hundred pounds; Fuller-Morrison Company; Park & Pollard Company; The Barrett Company; Wells Fargo Express Company; Illinois Seed Company; J. J. Badenoch Company; W. A. Wiebolt & Company; Swift & Company; Armour & Company; Wilson & Company; Brennan Packing Company and other representative exponents of the great industries in Chicago.

Samuel and Nels Olson have been residents of Chicago for thirty years and the two brothers are well known as engineers and inventors of exceptional ability, Peter Olson having been graduated from the Chicago Technical College. The brothers have worthily won their honor and prestige as representative captains of industry and are sterling citizens whose civic loyalty and liberality are on a parity with their recognized progressiveness in connection with productive industry.

C. J. ANDERSON COMPANY

At 212 Austin avenue is situated the well equipped establishment of this substantial industrial corporation, which is engaged in the manufacturing of controllers and starters for electric elevators, the superior devices that are thus made the basis of the enterprise having been invented and patented by C. J. Anderson, who is president and general manager of the company and to whose energy and technical ability has been due the development of the successful business of the concern, the company having been incorporated under the Illinois laws in the year 1910. The superiority of the Anderson controllers and starters for electric elevators has been proved in the most exacting of tests and in practical use, so that the business of the company is based on substantial foundations of merit and is constantly expanding in scope. The history of the enterprise is best

told in connection with a brief record of the career of its founder, and the pertinence of the following review is therefore unmistakable.

C. J. ANDERSON

C. J. Anderson was born in a small industrial city in Sweden and the year of his nativity was 1868. He attended school until he was twelve years old and then entered upon an apprenticeship to the trade of machinist and engineer. At the age of fourteen he was given a man's work, as he was then placed in charge of the operation of a portable engine utilized in brick yards and in furnishing power for threshing machines. His ambition and his practical experience urged him on to the seeking of broader opportunities for personal achievement, and at the age of eighteen years he severed the ties that bound him to home and native land and set forth to make his own way in the United States. The year 1886 marked the arrival of Mr. Anderson in Chicago, and here he obtained employment in the extensive railway-supply and machine shops of the Adams-Westlake Company. His desire was to secure work in the line of his trade but at the start there was no opening of the kind and he made the best of the situation by taking the position of janitor and window-washer, while waiting opportunity to gain a place at the machinist's bench. In due time he realized this ambition but his ambition to extend his education and especially to acquire a better knowledge of the English language, led him to attend the night sessions of the public schools. He applied himself with characteristic energy both to his work and his studies, and to such valiant souls success comes as a natural prerogative. With the Adams-Westlake Company he won advancement to the position of assistant foreman and after four years of service with this corporation he resigned his position and went to Mansfield, Ohio. There he readily found employment along the line of his trade but after six months the lure of Chicago, as a great industrial center, caused him to return to this city. For two years thereafter he was in the employ of the Gregory Electric Company, and the plant of the company was then destroyed by a boiler explosion. Under these conditions Mr. Anderson, who had in the meantime acquired definite technical skill as a patternmaker, took a position in the pattern shops of a malleable iron company. Later he returned to the Gregory Electric Company and when the same was succeeded by the J. L. Sherman Company he remained with the latter concern until the business was sold to the Cutler-Hammer Company. With this latter company he remained until it removed its headquarters from Chicago, and even for a time thereafter. In the meantime he had invented and patented his improved controllers and starters for electric elevators and, with full confidence in their practical value, he initiated the manufacturing of the same on a very modest scale, his original location having been at 312 Ontario street. His new shop was directly opposite the plant of the Adams-Westlake Company and gave him a full view of the windows which he so frequently washed in the initial period of his experience in Chicago. With a floor space of only five hundred square feet and with only two employes, both skilled mechanics, Mr. Anderson conducted his little manufactory during the first year. He himself worked indefatigable and for long hours, in order to gain

a foothold as a manufacturer, and in this period he supplemented his financial returns by accepting at his shop repair work for others. Enlarging the capacity of his plant from time to time, Mr. Anderson continued operations at the original location on Ontario street until 1915, and the expansion of the business had in the meanwhile led to its incorporation, in 1910. In the year 1915 removal was made to the present eligible headquarters, where are utilized six thousand square feet of floor space, the mechanical equipment and accessories being of the best modern type and employment being here given to an average force of more than thirty skilled artisans. Mr. Anderson still maintains the most careful supervision of all mechanical and executive details of the business, permits no product to go forth until he is assured of its absolute perfection in every particular, and the Anderson elevator controllers and starters have constituted their own best advertising, with the result that there is now a demand for them in all parts of the Union, the trade of the company showing each successive year a substantial increase.

ILLINOIS PATTERN WORKS

Under the above title is conducted one of the well ordered enterprises of the kind in Chicago, and the representative list of patrons noted on the records of the institution affords the best voucher for the efficiency of the service rendered. The business was established on the 1st of February, 1913, by the present proprietor, F. G. Howard, and from the beginning the factory has been established at 334 South Clinton street, where is now utilized five thousand square feet of floor space and where the equipment includes the latest improved pattern-making machinery and accessories. Thus in surveying the establishment there are to be found four engine lathes, three drill presses, one milling machine, together with band saws, disc grinders and all other needed appliances demanded in the production of all kinds of patterns and models for industrial application, a specialty being made of molding-machine work and experimental model work. The institution is fully prepared to handle with expedition and efficiency general contract manufacturing and assembling in its special line, a corps of ten skilled operatives is retained constantly in service and the list of patrons including a goodly number of the large and important manufacturing concerns of Chicago.

F. C. HOWARD

F. C. Howard, founder and proprietor of the Illinois Pattern Works, was born in England, and was a child at the time when the family came to the United States and established residence in New York. He received the advantages of the public schools and after leaving the same he entered Pratt Institute, in the city of Brooklyn, New York, in which well known technical institution he was graduated as a member of the class of 1907 and with the degree of Mechanical Engineer. For four years thereafter he was employed in the plant of the General Electric Company at Erie, Pennsylvania, and later he amplified his practical

experience by service in other representative manufacturing establishments in various parts of the Union. In 1913 Mr. Howard established the Illinois Pattern Works, and his technical and executive ability has come effectively into play in the development of the substantial and important business now controlled, his counsel being much in demand in connection with the devising and developing of intricate machinery and other mechanical products, and his progressive policies combining with his careful and honorable methods to conserve the cumulative success of his business. Mr. Howard is an active member of the Chicago Pattern-makers Employers' Association and is affiliated with the Masonic fraternity.

FRANK S. LEWIS

On the 1st of January, 1917, a corporate charter was granted by the state of Illinois to Frank Lewis and associates, with designation of a capital stock of ten thousand dollars, and the title of the new corporation is the name of the founder of the enterprise, Frank S. Lewis, who is president and treasurer of the organization, A. T. Lewis being vice-president and James J. Sheridan secretary. The corporation was formed for the purpose of manufacturing under most favorable conditions specially high-grade varnishes, and the very attractive trade-mark adopted in the connection having the name Lewis and the words "durability, uniformity, quality," as the consistent assurance of the superiority of products.

For the prosecution of the new enterprise the F. S. Lewis corporation forthwith made the best of productive provisions, as for the purpose a substantial and modern industrial building of one story and fifty by one hundred and thirty feet in dimensions was erected specially as a factory for the new concern, the building being of brick construction and its mechanical equipment and all other productive facilities being selected with great care and representing the most modern type. In the introduction of the Lewis varnishes the company met with success that exceeded expectations, and a steady and constantly increasing trade demand is being shown in the handling of the "Lewis" and "Copalco" brands of varnishes, there being about seventeen different varieties, each specially adapted to some specific purpose or purposes. An effective system of distribution has been adopted by the company in its dealings with the trade and from the maximum of efficiency in service and of quality in goods not the slightest deviation is permitted. The varnishes manufactured by the company are coming extensively into use by railway corporations, automobile and furniture manufacturers and in other connections where the highest grade of varnish is demanded. The company initiated active manufacturing in June, 1917, with a corps of skilled workmen in the factory and with two traveling representatives. Within the brief intervening period quality and service have brought remarkably gratifying returns and the Lewis varnishes are in use in nearly all states of the Union, with each respective portion of the trade territory showing a business of cumulative tendency. The goods of the concern are shipped also into the various Canadian provinces and in themselves constitute the most effective advertising that could be desired in their exploitation. The following consistent and appreciative estimate is worthy of reproduction: "Frank S. Lewis gives his undivided time and attention to the

supervision of the business that is conducted under his name and his wide acquaintanceship in the paint and varnish trade, together with his assured standing as a successful manufacturer of varnishes, has been the primary factor in bringing about the development of the remarkable volume of business and for the favorable reputation gained for the goods produced by the corporation of which he is the executive head. He has been a prominent and influential figure in the paint industry for fully fifteen years, and in 1905 he organized the Riverside Paint Works, of which he became sole owner and which he successfully conducted, with factory headquarters at 2001 Mendell street, until 1916, when he sold the plant and business to Harrison Brothers, Inc., who have since continued the enterprise in full accord with the policies and productive processes that had been instituted by Mr. Lewis, who established his independent varnish manufacturing business soon after his sale of the property mentioned." At date of going to press, a building of 5000 feet floor space is being erected to supply the demand for "Lewis Specialties."

For the past fifteen years Mr. Lewis has been a popular and influential member of the Chicago Paint, Oil & Varnish Club, and after serving acceptably as secretary of this organization he was made a candidate for president of the same, his defeat for this office having been compassed by only one vote. For an equal period he has maintained active membership in the national organization of paint and varnish manufacturers. He is affiliated with various bodies of the Masonic fraternity, including the Mystic Shrine, and is an active member of the Chicago Athletic Association, with a circle of friends that is coextensive with that of his acquaintances. The Lewis varnish manufactory is located at 2342 North Hoyne avenue.

R. C. SHORTESS & COMPANY

The large and merited success that attends a properly conducted industrial enterprise has signally characterized this representative manufacturing concern of Chicago, and the firm is entitled to special recognition in this publication. As manufacturers of the highest grade of soda fountains and store and office fixtures this firm has developed a substantial and well ordered commercial enterprise and has secure vantage-place among the representative industrial concerns of the western metropolis. The large and modern factory of the firm is situated at the corner of the North Albany and Chicago avenues, with numbers from 738 to 752 on the former thoroughfare. Specially apropos of the efficiency of service and correct commercial policies of R. C. Shortess & Company are the following extracts from the foreword of one of the catalogues issued by the firm:

"The largest asset of any manufacturer today is the confidence of his customers. We enjoy the confidence of our trade by right of our quality product. Shortess store equipment means not only the highest standard of quality in materials and workmanship but also service as well. We pride ourselves on our long list of satisfied customers."

Many attractive retail establishments of Chicago have been supplied with their complete outfit of fixtures by R. C. Shortess & Company, and all represent the most artistic type of modern equipment, as even the casual observer must realize.

A great variety of designs is represented in the standard store and office fixtures manufactured by this firm, and the same is true in regard to the soda fountains, which stand as the acme of perfection in both design and equipment, the complete outfitting of soda fountains being one of the important phases of the business conducted by R. C. Shortess & Company. In show cases and fixtures for stores and offices the firm offers the best that is to be found in modern construction, and the output from the factory includes a great variety of floor cases of different sizes and designs; counter cases; combination cigar cases and humidor cabinets; the most attractive designs in wall, floor and other cases and fixtures for drug and jewelry stores; tables and chairs for stores, with special designs for use in connection with soda fountains and lunch counters; and all appurtenances that go to make up the attractive equipment of modern and metropolitan stores and offices. To the many designs of soda fountains manufactured and installed by this firm have been given the specific names of numerous cities and states, and the Shortess iceless construction of soda fountain mechanism represents the ultimate of excellence, both in scientific principles and efficiency of service rendered. Careful attention is given to the manufacturing of special designs in store fixtures when demand is made for the same, and in this department also the service is always of the most efficient order.

The business conducted by R. C. Shortess & Company had its inception when, on the 1st of May, 1913, a partnership was formed by Frank P. Judson, Richard C. Shortess, Andrew Highland and Thomas Gabrielson. Mr. Judson, the chief financial power behind the new firm, had been long and prominently identified with Chicago banking interests, as will be shown in a brief sketch of his career that will be given in later paragraphs. The other three principals gave the requisite technical reinforcement in the founding of the new enterprise, as each was skilled in the mechanical principles and work involved in defining the various departments of manufacturing, besides which each of the three assumed also a financial interest in the business.

The original factory of the firm was established at 1731 West Lake street, where were utilized a store room and a barn, the aggregate floor space of this primitive plant being less than four thousand square feet. Here was instituted the manufacturing of high-grade store and office fixtures and the cabinet work of fine soda fountains, the final assembling of the general mechanism of the fountains being completed in the factory before the product was placed on the market, and this plan being followed to the present time. Messrs. Shortess, Highland and Gabrielson, members of the firm, each applied himself vigorously to work in the little factory, and at the start only three other mechanics were employed. The skill of these three partners and their insistent determination to turn out no product save of the highest grade and most attractive design, conserved the steady and substantial expansion of the business. In 1916 Mr. Shortess sold his interest in the business to Walter Schwanke, who at once assumed the office of general business manager. The growth of the business soon led to the appreciable extension of the manufacturing plant, and at the original location were utilized rooms that gave a total floor space of six thousand square feet. Here operations were continued until the completion of the present large and modern industrial plant that was specially erected for the company, by C. E. Cummings, and possession of which was taken by the firm in May, 1916. The factory building gives twenty-four

thousand square feet of floor space, and here the corps of skilled mechanics employed averages about forty-five. Six commercial salesmen represent the firm throughout its constantly expanding trade terrritoy, which includes a number of the states of the middle west, besides which a leading jobbing house in South Carolina sells the products of the firm to the southern trade. A steady and normal growth has marked the history of the thriving industry and the sales for the year 1916 were approximately two hundred thousand dollars. Mr. Highland is the efficient general superintendent of the factory, and is an expert cabinet maker and trade expert. Mr. Gabrielson, another of the original members of the firm, is superintendent of installation of the various products, manufactured, and Mr. Judson has charge of the fiscal and general financial affairs of the firm. Walter Schwanke has proved a splendid acquisition to the personnel of the firm and is giving effective administration in the office of general manager of the business.

WALTER SCHWANKE

Walter Schwanke, the efficient general manager of the business of R. C. Shortess & Company, is consistently to be designated as one of the vigorous, progressive young business men of his native city, his birth having occurred in Chicago on the 18th of January, 1889, his father, Paul Schwanke, having been a resident of Chicago for a period of about thirty years. Walter Schwanke received only a grammar school education and has supplemented the same effectively by the knowledge gained in the task taught school of practical experience. As a lad of twelve years he assumed the dignified position of office boy for Dr. Louis Schmidt, a successful physician and surgeon who is now a member of the faculty of one of Chicago's leading medical schools. After a period of six months the ambitious youth resigned his position to accept one that offered somewhat more emolument, that of general factotum in the drug store of W. Tanke. That he was not lacking in resolution and ambition was signalized during these early years, for he attended night schools, where he diligently applied himself while other boys of his age were intent in seeking amusement. While in the employ of Dr. Schmidt he had formed the acquaintance of Louis A. Becker, president of a company engaged in the manufacturing of soda fountains. Mr. Becker manifested a kindly interest in the aspiring youth and offered him a position in the manufactory after he should have completed his school work. Finally Mr. Schwanke took the position of errand boy in the offices of the L. A. Becker Company, and with this concern he continued his alliance nearly thirteen years, within which he won advancement step by step until he became assistant superintendent. Partly owing to the fact that the company finally removed its manufacturing plant from Chicago to Cleveland, Ohio, but more through his desire to enter business in an independent way, Mr. Schwanke severed his association with the Becker Company and invested his savings in the Acorn Brass Manufacturing Company, of Aurora, Illinois. Eight months later this concern went into bankruptcy and closed its doors. Under these discouraging conditions Mr. Schwanke returned to Chicago and accepted a position as salesman for the firm of R. C. Shortess & Company. Here he found his long and practical experience

with the L. A. Becker Manufacturing Company to be of much value, and he made forthwith an admirable record as a salesman, especially of the soda fountain equipment manufactured by the firm. His success in this field led him to take a financial interest in the business, and on the 1st of January, 1917, he became a member of the firm, by purchasing the interest of Mr. Shortess, one of the founders of the business. He has since held the position of general manager and as such has defined and introduced policies that are insuring a distinct increase in the scope and importance of the enterprise. Mr. Schwanke has a wide acquaintanceship among the representative manufacturers and other business men of Chicago and represents his firm as a member of the National Cabinet Manufacturers' Association.

May 22, 1916, recorded the marriage of Mr. Schwanke to Miss Nellie Lohr, of Dana, Illinois, and they reside at 4710 N. Bernard street.

THE UNITED STATES TENT AND AWNING COMPANY

In the year of 1904 the United States Tent & Awning Company was organized in the city of Chicago, county of Cook, state of Illinois. It started in a humble way, but it was destined to assume a predominating position in the amusement world, in so far as it pertains to the manufacture of big show or circus canvases, side-show paintings, and show paraphernalia in general.

Step by step this institution has advanced under the able direction of Edward P. Neumann, president; George J. Pilkinton, vice-president; Edward R. Litsinger, vice-president; and Walter F. Driver, secretary and treasurer.

Some of the customers can recall the inception of the United States Tent & Awning Company. In those days it occupied humble quarters on the west side. Later the demands of the ever-growing business compelled the utilization of larger quarters, and a plant was installed at 22 North Desplaines street.

For the last five years the United States Tent & Awning Company have occupied 75,000 square feet in the building located at 231 North Desplaines street, and certainly the gentlemen who have built up this great factor in the tent show world have every reason to be proud of their accomplishments.

The first floor of their building is devoted to the executive offices, which are very richly furnished in mahogany. Many expert stenographers are employed, —with a complete private telephone exchange. The offices are large and roomy and fitted up in an elegant manner, and it is evident that not a single detail has been overlooked in the furnishing of them.

One-half of the first floor is devoted to a carpenter shop and shipping room. The second floor is utilized as the roping department. The third floor is devoted to manufacturing circus tents and awning, and canvas goods in general. The fourth floor is a stock room. The fifth floor,—artists are employed that paint the side-show banners. This studio is most complete. The roof is glass as are the sides, and it is very evident that not a single detail has been overlooked in the Art Department.

The development of the United States Tent & Awning Company is a matter of marvel, and in justice to its worthy president, Edward P. Neumann, it is

U. S. TENT & AWNING COMPANY

most recorded that every feature, every bit of detail in the fitting up of its building has been under his personal supervision.

Chicago is generally recognized as the Central Market of the Western world, and it is not surprising that there should be located an institution which is to provide tents and show paraphernalia and canvas goods in general.

Chicago is the radiating center of amusement activity in America, with its superior shipping facilities and natural progressiveness in going after business.

While Edward P. Neumann has undoubtedly played an important part in managing the facory of the United States Tent & Awning Company, mention should be made regarding the other officers.

There is no man in the United States better known in the circus world or in the amusement business than Walter F. Driver, secretary and treasurer, and he is entitled to due notice for what he has done in bringing the United States institution to the front.

Edward R. Litsinger, vice-president, is well known in political affairs and banking circles in Chicago. He occupies a very prominent position in the civic life of Chicago.

George J. Pilkinton, vice-president, has associated himself with the company for the past two years. Prior to that time he held the important position of Western Representative of some of the largest duck corporations in the United States. Mr. Pilkinton, in the capacity of vice-president, has charge of the purchasing department, and all materials used by the company are purchased under his personal jurisdiction. He is a man that is well liked, and has a wonderful personality.

The firm has prospered and the business has been built up through good square dealing and the promptness in which their materials are turned out.

The firm is a member of the National Tent & Awning Makers' Association, which meets in various parts of the United States, once a year. Also holds membership in the Illinois Manufacturers' Association, the Chicago Association of Commerce and the Showmen's League of America.

STEFAN SCHNEIDER BALL BEARING MANUFACTURING COMPANY

Basing its operation on all that is involved in ample capital, the highest technical knowledge and experience and the most effective executive control and management, and provided with the facilities to turn out products of the maximum excellence, this new and vigorous corporation has all of the elements of assured and cumulative success. In its province of production the company has an unlimited scope for profitable activity, and this is manifest when consideration is given to the following statements from an announcement issued by the company:

"There is an enormous amount of ball bearings used in the manufacture of automobiles, but their use is not confined to one industry. The demand for them has increased to such an extent that at present it exceeds the output at the ratio of two to one. The following list gives an idea of the sphere in which ball bearings find industrial application: Automobiles, armoring machines, aeroplanes,

cranes, cream separators, dynamos, electric fans and motors, engines, elevators, harvesting machines, launches, motor vehicles, pumps, sewing machines, typewriters, turbines, ventilators, woodworking machines, roller skates, etc." Relative to its facilities and production the company's announcement continues as follows: "The Schneider ball bearings are manufactured from a special brand of steel, treated by our process, which gives them the proper degree of hardness, after which they are ground to the proper dimensions. All this is done with our specially designed machines and measuring devices of our own construction, and, with our rigid inspection, is thus guaranteed the best obtainable product on the market. The company has been fortunate in contracting for the necessary steel at reasonable prices, and as the demand for the product exceeds our output, one can well imagine the great possibilities of this company.

"Stefan Schneider, the president and chief engineer, has spent many years in the ball-bearing industry, both abroad and here. As director of a German company he worked with the greatest authorities in the ball-bearing line, and he himself has designed many improvements on ball bearings and ball retainers, as well as special machinery and measuring devices. In 1909 Mr. Schneider organized a company in Chicago, where he and six assistants began to work on ball bearings.

With the great increase in the business it finally became expedient in a commercial way to augment the productive strength by the organization of a stock company, and in 1917, the present Stefan Schneider Ball Bearing Manufacturing Company was incorporated under the laws of Delaware with a capital stock of two hundred thousand dollars, a limited amount of the stock being offered for public subscription and marking a most favorable medium of investment. In the same field of industrial enterprise Mr. Schneider had been concerned in the organization of a second company that had been remarkably successful, and his initiative, technical and executive ability is given full play in connection with the substantial corporation of which he is now the president; William C. Baber is vice president of the company; Geo. E. Harms, secretary; and Max Spiegel, treasurer. The manufacturing plant of the company is a thoroughly modern industrial building of three stories and basement, and here is utilized an aggregate floor space of six thousand two hundred and fifty square feet. The equipment of the plant is of the best and includes many machines and special devices invented and patented by Mr. Schneider, the founder of the business. The corps of employes includes twenty-five expert machinists and the new corporation has already entered upon a record of substantial and rapidly expanding business under the forceful and able management of its president, the products of the factory having already gained international reputation and a steady demand that more than taxes the productive capacity of the plant. Of the founder of this representative industrial enterprise more specific mention is made in an appending article.

The following consistent statements bear their own significance: "The directors and officers of this corporation are first-class business men and their ambition is to make a great success of this new concern and to satisfy the investing stockholders with a much higher dividend than is paid by similar concerns." The well ordered manufacturing plant of the company is established at 1821-23 Berteau avenue.

STEFAN SCHNEIDER

Stefan Schneider, founder and president of the company mentioned in the foregoing article, has by his ability and energy become a representative figure in industrial circles in Chicago, where he has gained secure place in popular confidence and good will, his civic loyalty being on a parity with his progressiveness as a veritable captain of industry. Mr. Schneider was born in the city of Berlin, Germany, on the 12th of October, 1861, and his youthful educational advantages were of excellent order, including the discipline of the gymnasium, corresponding to the high school of the United States, and also a thorough technical course. Under the most effective conditions he served an apprenticeship to the trade of machinist, and as an expert he was for twenty-two years actively identified with the work of his trade in his native city,—first as a mechanic, later as a superintendent and director and eventually as a prominent and successful manufacturer. He has been further endowed with marked inventive genius along mechanical lines, and has to his credit eighty-seven different inventions on which he has received patents, many of these applying to ball bearings, in the production of which now important mechanical accessories he was a pioneer and to the bringing of which up to the present high standard it is altogether probable no other one man has contributed more largely or conspicuously. While he was engaged in the manufacturing of ball bearings in Berlin his trade in the United States attained to such large volume that he determined to transfer to this country his base of operations. Accordingly, in 1908, he sold his large business and allied interests in Berlin and in the following year he came to America and established his permanent residence in Chicago. Here he initiated on a small scale the manufacturing of the improved ball bearings produced through the medium of special machinery and accessories invented by him, and his first factory, in which only six men were employed, was at 1014 West Grand avenue. One year later he erected, at a cost of thirty-six thousand dollars, a modern manufacturing plant at the corner of Harrison street and Clarence avenue, the three-story building giving a floor space of more than eleven thousand square feet. At this juncture he effected the organization and incorporation of the United States Ball Bearing Manufacturing Company, with a capital stock of five hundred thousand dollars. He was elected president of the new corporation and the other officers were as here noted: A. A. Strom, vice-president, and Paul Schulte, secretary and treasurer. He continued as president and general manager of this company until 1913, and in the meanwhile developed the business to large volume, the company having at the present time more than one thousand employes on its pay roll. In the year last mentioned Mr. Schneider sold his interest in the business and instituted operations in a semi-independent way. His new enterprise likewise was attended with success and led finally to the organization of the present Stefan Schneider Ball Bearing Manufacturing Company, of which he has been president and general manager since its incorporation, in 1917. Upon his arrival in the United States Mr. Schneider forthwith made application for American patents on his various inventions, and these patents were granted before the close of the same year, his devices being also fully protected by patents issued by Germany, England, Russia, France, Italy and the Dominion of Canada.

In the year 1900 was solemnized the marriage of Mr. Schneider to Miss Amelia Henzelman, of Berlin, Germany, and they have two children,—Hattie and Max.

THE EXPURGO MANUFACTURING COMPANY

In the special pharmaceutical formulas utilized in the manufacturing of the proprietary medicinal agents manufactured by this company are involved the best scientific principals and methods and the use of remedial preparation of maximum value. Proved in value with all of thoroughness, the products issued by the Expurgo Manufacturing Company are recognized as definite specifics and have received the unqualified approval of leaders in the medical profession. The principal pharmaceutical preparations manufactured by the company are issued under the following titles, which measurably indicate the province of therapeutic action: Expurgo Anti-Diabetes Remedy, Expurgo Lapis, Expurgo Anti-Bright's Remedy, and Epurgo Blood Salt.

In the year 1912 Chemist Charles Bauer and Chemist Frank Beyer formed a partnership association and engaged in the manufacturing of the valuable pharmaceutical prepartions that are designated in the foregoing list and that represent the concrete results of years of research, study and scientific experimentation on the part of these representative scientists and pathologists. Obtaining United States copyrights on their admirable formulas, the members of the new firm established their first manufacturing plant in a building at 938 Wells street, where requisition was made for two floors that gave an available working space of seventy-five hundred square feet. Through the great merit of the products the remedies had gained a national reputation within the ensuing year and the business consequently became established on the staunchest basis. Each successive year has been marked by a consecutive expansion of the company's sales and the great volume of business is based on proved results in the treatment of the specific diseases for which the remedies have been devised. Unsolicited commendations have been received by the company from innumerable patients who have been benefited by the remedies, but the company has in no case wandered outside the best ethical pale, as it has consistently refrained from publishing any such personal tributes under the names of the ones extending the same.

In 1913 the original partnership alliance was changed and further fortified by the incorporation of the business under the present title of the Expurgo Manufacturing Company, the charter of which designated a capital stock of seventy-five thousand dollars, Mr. Bauer becoming president and Mr. Beyer secretary and treasurer of the company. In the same year the manufacturing headquarters were transferred from the original location to 815 North Clark street, and here eighty-five hundred square feet of floor space are utilized for the accommodation of the finely equipped laboratories, offices and compounding rooms of the company, all products being prepared and issued under the personal and punctilious supervision of the two principals who founded the enterprise and who have been able to develop the same from most modest proportions until it represents one of the important and extensive pharmaceutical industries of Chicago. The Expurgo preparations are sold in all parts of the United States, and the company handles

its business through the wholesale and jobbing houses engaged in the drug trade and through a well organized and efficient mail-order service. In the treatment of diabetes mellitus the Expurgo diabetes remedy has effectually proved its value through its use with complete success by many physicians both in the United States and European countries and in the treatment of cases of the most obstinate order. Equally beneficent results are gained in the use of Expurgo Lapis, for the treatment of kidney and bladder disorders and all ailments due to excess of uric acid, this preparation having a remarkable value as a dissolvent of gall, kidney and bladder stones. Of another of the important products issued by the company the following statements have been written: "Expurgo Anti-Bright's Remedy has been put on the market within the past few years and has met with great success. It has been especially effective in action when used in the incipient stages of Bright's disease, when other remedies have failed, and its efficacy has been proven also in advanced cases." Expurgo Blood Salt is an excellent and absolutely harmless remedy for any disturbance of digestion, such as dyspepsia, gastric catarrh, sour stomach, heartburn, loss of appetite, constipation, etc., and as an aid to digestion in wasting and nervous diseases.

CHARLES BAUER

Charles Bauer, president of the Expurgo Manufacturing Company, was born in the city of Frankfurt-am-Main, Germany, on the 1st of April, 1867, and in his native land he received not only a thorough classical education but also the best of scientific discipline, especially in the field of chemistry. His technical education was acquired in the famous Halle University, in which he was graduated as a member of the class of 1892 and with the degree of Chemist. As a chemist he followed his profession in his native city until 1910, when he came to America and established his residence in the city of Winnipeg, Canada, where he found employment in the line of his profession and where also he formed the acquaintance of Frank Beyer, their close friendship having culminated in their final establishing of their partnership in business, as noted in the foregoing article. In the autumn of 1911 the two friends came in company to Chicago and in the following year they founded the business in which they have since continued to be associated and which is now conducted under the corporate title of the Expurgo Manufacturing Company.

In his native city, in 1897, Mr. Bauer wedded Miss Mary Winnege, and they have two daughters,—Mary and Charlotte.

FRANK BEYER

As the foregoing article descriptive of that corporation specifically indicates, Mr. Beyer was associated with Charles Bauer in founding the prosperous industrial and commercial enterprise now conducted by them under the corporate title of the Expurgo Manufacturing Company, and Mr. Beyer is secretary and treas-

urer of the company. Mr. Beyer was born in the historic old city of Grätz, capital of Styria, Austria, and the date of his nativity was October 10, 1880. With the thoroughness characteristic of the educational institutions of his native land Mr. Beyer received his youthful discipline under most effective conditions and influences, and in 1903 he was graduated in the University of Grätz, where he had given special attention to the study of chemistry and other branches of science and he received from his alma mater the degree of Chemist. Thereafter he followed the work of his profession as a chemist in various cities in Austria and Germany until 1910, when he came to Canada and made his way to the city of Winnipeg, Manitoba, where he remained until the following year, when he accompanied his present business coadjutor, Mr. Bauer, to Chicago, and they became associated in the founding of the business which they have developed to large volume and which is conducted under the title of Expurgo Manufacturing Company. Mr. Beyer has gained secure vantage-ground as one of the able and progressive business men of the younger generation in Chicago, and here both he and his associate, Mr. Bauer, has established most pleasing social and business relations.

In his native city of Grätz, in 1903, shortly after his graduation in the university, was solemnized the marriage of Mr. Beyer to Miss Anna Hofera, who was there born and reared, and where their only child, Anna, was born.

SMALLBONE MANUFACTURING COMPANY

This corporation controls a substantial and well ordered industrial enterprise in the manufacturing of sewing-machine attachments, and the excellent equipped manufacturing plant is established at 1821 Berteau avenue. The business was originally incorporated under the title of the Johnson Shuttle Company, this corporate charter having been obtained in 1906 and operations having been based on a capital stock of ten thousand dollars. In modest quarters at the corner of Wilson avenue and East Ravenswood avenue the new company initiated the manufacturing of sewing-machine shuttles of superior grade and type, and the first officers of the corporation were as here noted: William B. Johnson, president; John N. Johnson (not a kinsman of the president), vice-president; and John L. Flannery, secretary and treasurer. The original factory utilized a floor space of four thousand square feet and the corps of employes numbered about thirty persons. In 1909, to provide adequate accommodations for the rapidly expanding enterprise, removal was made to quarters in the Boye needle-manufacturing plant, at 4343 Ravenswood avenue. At this juncture in the trend of progress Mr. Flannery sold his interest in the business to C. W. Davidson, of Minneapolis, Minnesota, William B. Johnson having sold his stock two years previously to H. E. Smallbone, the title of the company being at that time, 1907, changed to the present form. Mr. Smallbone continued as president of the company until 1916 and was succeeded by John N. Johnson, the present incumbent.

In 1911 the manufacturing plant was removed to the Deacon building, at the corner of Ravenswood and Berteau avenues, where operations have since been

continued. In 1913 was effected a reorganization of the company and the capital stock was increased to two hundred and fifty thousand dollars. There was at this time every augury for a great expansion of the business, but the change in national tariff regulations proved unfavorable to the manufacturing enterprise of this company. This difficulty was met by adding to scope of manufacture the production of an improved and patented button-hole attachment for sewing machines. Provision for this expansion was made by the purchase and absorption of the D. & D. Button Hole Machine Company and the Jessen Button Hole Machine Company, both of Minneapolis, Minnesota. Since 1913 the Smallbone Manufacturing Company has continued the production of shuttles and buttonhole attachments, and the output is sold entirely to the jobbing trade, thus finding representation in all sections of the Union. In the spring of 1916 John N. Johnson was elected president of the company, and the other executive officers are Walter Maecher, who is vice-president; and C. W. Davidson, who is secretary and treasurer. In the factory is retained an average force of thirty-five employes, nearly all of whom are skilled mechanics.

JOHN N. JOHNSON

John N. Johnson, president of the industrial corporation mentioned in the foregoing article, was born in Westergotland, Sweden, on the 2d of February, 1865, and there he received his early education in the common schools. In 1884, as an ambitious and aspiring youth of nineteen years, Mr. Johnson came to the United States and settled on a farm near Paxton, Illinois. He had acquired no trade and thus turned his attention to farm work, but his determined purpose was to establish himself in some productive line of business at the earliest expedient time. He continued his service as a workman in the field of agricultural enterprise for a period of three years, and in the meanwhile gave close attention to the study of the English language, as a prerequisite to success in the land of his adoption. In 1887 Mr. Johnson came to Chicago and entered the employ of the L. E. Woodbury Broomcorn Company, with which manufacturing concern he continued his effective service for the ensuing ten years. In the meanwhile he had attended night schools and by this means effectively supplemented his practical education. He was punctilious in the saving of his earnings, and in 1897 he formed a partnership with C. M. Morse, a former bookkeeper for the Woodbury Company, and the new firm of Morse & Johnson engaged in the broomcorn business. The enterprise was made definitely successful, and prosperity attended the same for a period of ten years. The firm's supply sources then became greatly impaired, as the thirteen extensive dealers in broomcorn upon whom they had depended for supplies, began manufacturing in an independent way, this causing the elimination of the intermediate manufacturers and bringing a virtual termination to the business of the firm of Morse & Johnson. While thus engaged in business Mr. Johnson had formed the acquaintance of William B. Johnson, the organizer of the Johnson Shuttle Company, and at the inception of this new enterprise John N. Johnson, in 1906, became vice-president of the company. Of his career in this connection adequate description

is given in the preceding article descriptive of the company and its successor, the Smallbone Manufacturing Company, of which the subject of this review is the executive head. Mr. Johnson has marked the passing years with that earnest and high endeavor which normally results in success, and as a manufacturer and citizen he has maintained the highest reputation for integrity and honor. He has been in the most significant sense the builder of the ladder on which he has risen to a plane of prosperity and influence, and he commands the unequivocal esteem of all who know him. In politics Mr. Johnson is a republican, and both he and his wife are zealous and valued members of the Swedish Mission church located at Robey and Ainslie streets, he having been its treasurer and a member of its board of trustees for more than twenty years.

In 1893 was solemnized the marriage of Mr. Johnson to Miss Emma W. Johnson, a representative of a family in no manner akin to his own, though of the same name, and the four children of this union are Myrtle, Reuben, Walter and Helen.

WILDMAN BOILER & TANK COMPANY

One of the staunch and well ordered industrial enterprises of Chicago is that conducted under the above corporate title, and the well equipped manufacturing plant of the company is established at 3024-28 Carroll avenue, the factory having an aggregate floor space of eight thousand square feet and its output including the best grade of steam boilers, stacks, tanks and steel and iron plate work of every description. Though Chicago has been the stage of activities pertaining to this substantial manufacturing enterprise since the year 1894, yet the enterprise has distinct pioneer prestige, as its inception dates back to the year 1864, when Robert Wildman, father of the present owners and executive officers of the business, established at Saginaw, Michigan, a modest factory in which he began the production of saw-mill boilers, marine boilers, refuse burners, etc. The great lumbering industry of Michigan was then at its zenith and Saginaw was one of its important centers, so that Mr. Wildman developed a substantial and prosperous business in the manufacturing of the above noted appurtenances demanded in connection with extensive lumbering operations. In the Michigan city he continued operations many years,—a period of about thirty years having elapsed before, as a matter of industrial expediency, the business headquarters were removed to Chicago, in 1894. Under the title of the Wildman Boiler & Tank Company the business was incorporated in 1915, and operations are based on a capital stock of fifteen thousand dollars. This is a close corporation and its officers are sons of the honored founder, who was a pioneer in his sphere of manufacturing industry in the state of Michigan whose character and achievement marked him as one of the world's strong and worthy workers. William Wildman is president and treasurer of the company and James Wildman is secretary. In the manufactory is retained an average force of about eighty men, the business is conducted along conservative lines, the value of the average annual output being about one hundred thousand dollars, and at no stage has there been manifested any desire for strenuous exploitation, those in control being satisfied to conduct quietly and effectively a normal volume of business safeguarded by dis-

crimination, efficient service and correct commercial policies. Apropos of this attitude are the following significant statements: "No special effort has at any time been made to develop the business to particularly large proportions or to reach out for foreign trade,—in fact for other than a local business. The observance of this policy accounts entirely for the fact that the business is not of greater magnitude."

PAASCHE AIR BRUSH COMPANY

He whose inventive genius makes possible the manufacturing of devices that conserve economy in time and effort in connection with the widely diversified activities of humanity is a genius benefactor, and the practical results achieved by Jens A. Paasche in the invention and exploiting of most valuable industrial devices fully entitle him to such distinction as one who has been a benefactor. Though the Paasche Air Brush Company was organized specifically for the manufacture of the first type of air brush invented and patented by Mr. Paasche yet the wonderful expansion of the industrial enterprise has been attended by his inventing of other devices of equally practical order and by adding the same to the company's productive output. The enterprise has now become one of definite importance and unequivocal success, and it is gratifying to present in this publication a brief review of the business and of the career of its founder.

The Paasche Air Brush Company was organized in 1905, by Jens A. Paasche, and no one condition so clearly marks the wonderful development of the business as that indicated in the fact that when the company was incorporated under the laws of Delaware, on the 1st of May, 1916, its business had become one of such importance as to make consistent the placing of the capital stock of the new corporation at one hundred and fifty thousand dollars. The organization was perfected by the election of the following named officers: Jens A. Paasche, president; O. G. Paasche, vice-president; and H. W. Norman, secretary. The well equipped factory of the company is established on the second floor of the Machinery Exchange building, a modern industrial structure, at 1219 West Washington Boulevard, and here is retained a corps of about seventy-five employes, the greater number specialize in the various departments in the assembly of the products. The business of the company for the fiscal years of 1917 aggregated fully two hundred thousand dollars and the growth of the enterprise continued in a constantly cumulative way.

The Paasche air brushes, manufactured in many different designs and sizes, are remarkable in their great versatility of application and for superiority over all other similar devices now on the market. Paasche brushes admirably suited to the needs of portrait artists; photographers; illustrators; newspaper, lithograph, commercial and fashion artists; and monumental, jewelry, textile and pottery designers. These versatile implements are available and of supreme value wherever work of art in any form or fashion are produced, and in their employment tremendous economies of time and effort are insured, the device having consistently been designated as "one of the most sensational evidences of twentieth century progress."

The original invention of Mr. Paasche is embodied in the manufacture of the company's A. No. 2 Model air brush, which is said by expert users to represent the final perfection in air-brush construction. It is splendidly adaptable to all classes of work at the easel or on the drawing table, and insures the highest grade of work when properly utilized by portrait artists, photographers, designers, letterers, etc. The Paasche air brushes, air-compressor outfits and easel drawing tables are standard the world over, as are also other inventions controlled and manufactured by the company. In speaking of the unlimited field in which the Paasche air brush is applicable, its inventor himself has given the following consistent statement: "It is capable of responding to every impulse of the man who uses it. The softest shadow, the sharpest hair line, the most delicate overtone, the most vigorous solids,—all are obtainable under perfect ease of control, and color, paints are pigments of all descriptions and consistencies come from the marvelous instrument at the will of the artist's brain and the facile sweep of his hand. No slightest mechanical detail is overlooked in the production of the wonderful Paasche air brush. It responds to the artistic impulse."

The second series of air brushes devised and placed on the market by Mr. Paasche greatly increased the province of application and includes varied models designed for specific purpose and in varying sizes, the celebrated "3 in 1" Paasche air brush is being specially remarkable in practical differentiation and versatility of application. Well defined advertising matter and general catalogues issued by the company give ample details concerning the various types of brushes manufactured and also relative to the Paasche automatic electric air-compressor outfits, the Paasche liquid carbonic gas outfit, the Paasche foot pump outfit and double-cylinder hand pump, and the Paasche improved easel and drawing table. The company also supplies a great variety of stencils for simplifying the work of artists using the Paasche air brush.

The function of this corporation have further been extended to compass the manufacture of the Paasche portable painting outfit, for the rapid and unexcelled painting of concrete walls, stucco houses, brick buildings, frame houses, structural iron, steel elevators, etc., and equally facile in calcimining, varnishing and general interior finishing and decorating work that has been previously done by hand. This remarkable outfit, with portable air compressor, utilizes on a large scale the same principles that mark the art air brush of the Paasche manufacture. These outfits for general exterior and interior decorating work represent the maximum of efficiency, and in connection with the use of the Paasche quick-action air brush labor is reduced and better finishes produced. This fine brush has a stroke that ranges from a line to any size spray, and the results are attained by the simple touch of a trigger only. These brushes have a marvelous capacity for distributing paints, enamels, varnishes, lacquers, bronzes and liquid materials of all descriptions. The Paasche "4 in 1" model air brushes are the ultimate devices in saving time and labor in the application of paints, enamels, varnishes, shellacs, fillers, stains, lacquers, bronzes, celluloids and chemical solutions, etc. Other Paasche inventions now manufactured by the company are oil and water separators, containers, air regulators, turn tables, exhaust fans, and the Paasche portable, automatic, electric air-compressor units, which are susceptible of being used singly or in combination of units. The air compressor

JENS A. PAASCHE

manufactured are of varied sizes and types, and may be operated by electricity, gasoline engines or other accessible power sources. The Paasche sprayers likewise represent the final word in the production of such devices and are the most practical and serviceable of their kind. The automatic electric controller represents the latest and best improvement for automatically starting and stopping motor-driven compressor outfits developing up to one-horse power. The Paasche outfits have proven of inestimable value to painters and decorators, the portable painting outfit having a covering capacity of one hundred square feet in three minutes. Significant and fully justified is the following statement: "Paasche finishing equipments are being used with remarkable success in preference to hand brushes for painting and finishing of toys and novelties, to the highest grade finishing of pianos, furniture, automobiles and painting of houses, structural iron, army and navy equipments, including battleships, boats, etc."

JENS A. PAASCHE

The foregoing article mentions the various devices invented by Mr. Paasche and placed upon the market by the company of which he is president. The record established clearly his genius as an inventor of mechanisms of great practical value, and he is also known as a progressive and energetic business man and as a citizen of distinct loyalty and public spirit.

Mr. Paasche was born in Trondjem, Norway, on the 27th of February, 1880, and is a son of John F. Paasche, master bookbinder established sixty-five years. Mr. Paasche was afforded the advantages of the excellent schools of his native land and in 1900, shortly after attaining his legal majority, he severed the home tie and came to America. Soon after disembarking in the port of New York city he came to Chicago, and here he entered the employ of Thayer & Chandler, wholesale and retail dealers in artists' supplies. His compensation at the start was but nine dollars a week, but his ability and effective service soon gained him advancement, and he continued in the employ of this firm for a period of three years. He then resigned his position as did also O. C. Wald, another employe of the firm, and the two young men initiated the manufacture of air brushes on a small scale with headquarters in the Haymarket building. Eighteen months later Mr. Paasche sold out his one-half interest to Mr. Wald. In February, 1904, he established the firm of Paasche Bros., with O. G. Paasche, in partnership, until August, 1905, when Jens A. Paasche, purchased his brother's interest and effected the organization of the Paasche Air Brush Company, as duly noted in the foregoing article descriptive of the company. His record in connection with the enterprise since that juncture is adequately outlined in the preceding context.

Mr. Paasche is a member of the Illinois Manufacturers' Association, the Chicago Association of Commerce, the Chicago Credit Men's Association and the Chicago Norske Klub. He has through his own ability and effort won place as one of the representative business men of the younger generation in Chicago, and in the city of his adoption his circle of friends is limited only by that of his acquaintances. He is a director of the Norwegian Old People's Home and is

identified with various social organizations through which he vitalizes the gracious memories and associations pertaining to the fair land of his nativity.

CHICAGO CEMENT BURIAL VAULT & CASKET COMPANY

The important industrial enterprise conducted under the above title has been developed entirely through the inventive genius and fine initiative and executive ability of John L. Janisch, who has won for himself a distinct vantage-place as one of the successful captains of industry of the younger generations in Chicago. His manufacturing establishment is situated at 5301 Ravenswood avenue, where are provided the best of facilities for the manufacturing of cement vaults, caskets, molds and outfits for making of such cement vaults and caskets under the patented Janisch process. The following pertinent statements are worthy of reproduction at this preliminary stage of reviewing the business and giving record concerning its honored founder:

"John L. Janisch, the proprietor of the Chicago Cement Burial Vault & Casket Company, has been in the cement construction work for years, and he knows that a slab of concrete one or one and a half inches thick, if it is not thoroughly reinforced with steel rods or heavy steel wire, will not stand up or bear any weight, and any reputable architect or engineer will verify this statement. Our cement burial vaults and cement caskets are all reinforced throughout and guaranteed to sustain any weight of ground they must carry. Our mixture of concrete is one part of the best Portland cement to one and one-half of clean, sharp torpedo sand and a sufficient quantity of the best waterproofing compound,—all of which is thoroughly mixed before being poured into steel molds. With our method of sealing we can guarantee the vaults and caskets, when sealed, to be absolutely air-tight, waterproof and unbreakable, and that they will last for centuries."

For nearly a score of years Mr. Janisch has been a successful cement worker and contractor, and through his activities in this line he discerned the great possibilities for the development of high-grade and enduring burial vaults and caskets of cement construction. After prolonged study and experimentation he perfected his process of manufacturing such products, and finally he established his well equipped independent factory for the producing of the vaults and caskets, as well as molds for the same, with incidental protection of his process and the appurtenances thereof through patents granted to him by the United States government. Through the sale of the rights to his molds and process for designated territorial limits Mr. Janisch amplifies greatly the scope of his business and makes incidentally possible also the development of prosperous business enterprises on the part of those who secure the rights to his process. So great is the value of the Janisch vaults and caskets in supplying means for the interment of the dead under conditions that must appeal to all persons who are called upon to consign the remains of loved ones to a last resting place, that appeal is made to every one who would make the most gracious provision of this order, the business thus having the more stability and worth through its sentimental significance. Catalogues and bulletins issued by Mr. Janisch give full description of his unex-

celled burial requisites, and thus there is no necessity for attempting to present in this article the data thus readily available.

JOHN L. JANISCH

John L. Janisch, founder and owner of the industrial enterprise mentioned in the foregoing context, was born at East Bristol, near the beautiful city of Madison, capital of the state of Wisconsin, and the date of his nativity was June 25, 1878, his father, Julius Janisch, having been one of the substantial citizens of that part of the Badger state, where he followed the vocation of mason contractor. In the public schools of his home place Mr. Janisch received his early education, and there also he acquired practical experience while still a mere boy, as he began to earn his own living when he was only twelve years old. He finally completed a thorough apprenticeship to the trade of stone mason, and as a journeyman at his trade he worked in Madison and other cities of Wisconsin. His intrinsic sagacity eventually caused him to realize that concrete work was destined largely to supersede that of the old-time stone masonry, and, with characteristic judgment, he turned his attention to mastering the intricacies of cement industry. In 1894 he had made himself a skilled workman in this line and began doing contract work in various lines of concrete construction. He continued his activities in his native state until 1905, when he came to Chicago, and here he continued his work until he had accumulated sufficient capital to justify him in establishing an independent contracting business in cement construction work. In this field of enterprise he formed, in 1908, a partnership with Philip Lacy, under the firm name of Janisch & Lacy, but one year later he purchased his partners interest in the business, which he thereafter conducted in an individual way. In 1913 Mr. Janisch conceived the idea of inventing a series of molds for the manufacturing of cement burial vaults and caskets, and the results of his experiments are shown in the substantial industrial enterprise which he has since built up and of which adequate mention has been made in the foregoing article. It is uniformly conceded that the vaults and caskets produced by his process are the best mortuary accessories of the kind yet placed on the market, and the demand for the same is extending into all parts of the United States, as well as into foreign countries.

In the year 1914 Mr. Janisch initiated the manufacturing of cement burial vaults, and he devised machinery and other appliances for the purpose. During his first year of business he sold one hundred of the vaults, and the substantial expansion of the business is shown in the statement that for the years 1916-17 the number of vaults sold by Mr. Janisch in Chicago aggregated more than thirteen hundred, the manufacturing of the fine caskets by his process having been a recent development of the business. In the spring of 1917 Mr. Janisch purchased the plant and business of the Hercules Cement Vault Company, of Chicago, and since that time he has conducted the consolidated enterprises with headquarters at 5301 Ravenswood avenue, where his manufacturing plant includes a modern industrial building of two stories, with an aggregate floor space of more than four thousand square feet. Mr. Janisch gives scrupulous super-

vision to every detail of manufacture and gives employment to an adequate force of skilled cement workers.

Mr. Janisch holds himself independent of partisan lines in politics but is known as a loyal and progressive citizen as well as a resolute and ambitious business man. He and his wife are communicants of the Catholic church, and he is affiliated with the Catholic Order of Foresters.

At Waterloo, Wisconsin, in the year 1906, was solemnized the marriage of Mr. Janisch to Miss Margaret F. Lacy, who is a sister of his former business partner, Philip Lacy, and a daughter of John T. Lacy, a respected citizen of Waterloo. Mr. and Mrs. Janisch have three children,—Urban, Muriel and Norbert.

THE OPALITE SIGN COMPANY

Marvelous has been the development made in recent years in the line of artistic systems and methods of out-of-doors advertising, and the best of artistic talent, mechanical skill and distinctive ingenuity has been fully utilized in providing new and effective means for the attracting of public attention through the medium of such advertising devices and original display systems. It is in this important field of enterprise that the Opalite Sign Company has come to its own and developed a prosperous business, the concern being duly incorporated under the laws of Illinois. The factory and general sales offices of the company are established at 403-405-407 North Wells street, where is utilized an aggregate floor space of thirty-four hundred square feet and plans being now under way to increase these accommodations, in order to meet the demands placed upon the institution by its ever expanding business. The unique signs that give title to the corporation are covered by United States letters patent, the same having been issued in 1917.

The Opalite Sign Company was incorporated in December, 1916, and the executive officers are O. H. Davidson, who is president, and G. M. Evans, who is secretary. The specialy attractive products manufactured by this new and enterprising concern have already met with unequivocal popular favor and the business has been extended not only into the most diverse sections of the United States but also into several foreign countries. The Opalite signs possess several valuable and attractive features that give them pre-eminence over the older designs, not only from an artistic standpoint but also because the arrangement is such that one electric lamp will effectively illuminate two letters of a double-face sign. The Opalite letters can be distinctly seen and identified from a greater distance than an exposed letter of twice the size, and the raised characters render the sign equally legible from both the front and the sides,—a claim that can not be made for the exposed-lamp letter signs. The unique process of bending enables the company to furnish letters of peculiar and distinctive whiteness, and these not only stand forth with marked contrast from a dark background under daylight conditions, but at night the transparent characters appear to consist of solid masses of light, the maximum luminosity being obtained by concentrating the entire volume of light in the illumination of the letters or other characters utilized. This result is accomplished largely through an original

system or method of giving metal facings to the individual letters. The characters on the signs of larger dimensions can be made interchangeable, and thus the device is specially adaptable and useful in connection with day and night displays for theaters and department stores, where is demanded a constant changing in the wording of such electric signs. Should a letter be broken or otherwise impaired, it is a matter of but a moment to detach same from its facing and replace it with another that is perfect, this change being made simply by removing a few screws from the back of the enclosed letter. Another valuable and unique feature of the Opalite sign is that all of its essential parts can readily be removed for cleaning. It has consistently been said that the Opalite sign is the "last word in illuminating advertising." The Opalite Sign Company owns and controls patents on the original features of its signs and the Chicago institution is one of only two of the kind in the United States.

GUARANTY IRON & WIRE COMPANY

At 2847 West Lake street is established the manufacturing plant of this well ordered and progressive corporation, the substantial business of which has been developed through efficiency of service and excellence of productions. The enterprise, like many other flourishing Chicago industries, had a very modest inception. In the year 1913 William A. Galvin and John E. Schmidt formed a partnership and in a little shop that gave not more than one thousand square feet of floor space, at the corner of Spaulding and North avenues, was initiated the manufacturing of ornamental and miscellaneous iron products. During the first year the number of employes was only ten and the business was entirely of local order. In 1914 Richard J. Ross became associated with the enterprise, which was further fortified by his investment of capital, and at this juncture the business was incorporated under the present title of the Guaranty Iron & Wire Company, Mr. Ross becoming president of the new corporation, Mr. Schmidt the treasurer, and Mr. Galvin the secretary. From this time forward the enterprise has constantly increased in scope and importance, and within a short time after incorportation the plant was removed to the present eligible and well equipped quarters, the area of floor space and yard accommodations aggregating fourteen thousand square feet, and the force of employes averaging about seventy.

The leading products of this company's plant are firedoors and iron stairways, and all work turned out fails to pass muster until it has been proved to measure up to the high standard set and maintained by this company. From local environs the business of the company has been extended throughout the states of the middle west, especially Illinois and Ohio, and the cumulative tendency is always in evidence, as the reputation of the company constitutes in itself a most effective medium of advertising, the while satisfied patrons do their part in furthering the growth of the business, as their recommendations have definite potency. In 1914 the annual sales amounted to twenty thousand dollars, those of the year 1916 aggregated one hundred and fifty thousand dollars, and the record for the year 1917 will show, at conservative estimate, a total business of more than two hundred and twenty-five thousand dollars.

In January, 1917, Mr. Schmidt sold his interest in the business to his associates, Messrs. Ross and Galvin.

RICHARD J. ROSS

Richard J. Ross, president of the Guaranty Iron & Wire Company, which is reviewed in the preceding article, has gained recognition as an expert and ultimate authority in the manufacturing of ornamental iron and wire products, and thus his fortifying influence has been large in connection with the developing of the substantial business of the company.

Mr. Ross was born in the fair old city of Detroit, Michigan, on the 2d of March, 1867, and there he acquired his early education in the public schools, though he was a lad of only thirteen years when he entered upon an apprenticeship to the trade of blacksmith. After completing his three years' apprenticeship and gaining status as a skilled artisan, he continued his service as a journeyman in the same shop for one year. He was but eighteen years of age when he was appointed foreman in the John L. Thompson Wire & Iron Works, Detroit, and he held this post until after the death of Mr. Thompson, his next alliance having been with the National Iron & Wire Works, Detroit, in which connection he held for two years the position of foreman.

In 1889 Mr. Ross came to Chicago to accept the position of foreman in the shops of the F. P. Smith Wire & Iron Works, and later he was made superintendent of the entire factory. With this corporation Mr. Ross continued his able and fruitful services for the long period of twelve years, and in 1901 he became the founder of the American Bronze Foundry Company. He was superintendent of the manufacturing plant of this corporation for a period of eighteen months, whereupon he was made superintendent of the manufacturing plant of this corporation. One year later he accepted the position of factory superintendent for the Variety Manufacturing Company, with which he continued thus to be associated for three years. He then organized the R. B. Ross Manufacturing Company, for the manufacturing of fire doors, and the plant of this company, in which he is still a stockholder, is situated at Forty-third street and Ogden avenue. He continued as the general superintendent of this manufactory for two years, and the next three years found him the incumbent of a similar executive position at the manufacturing plant of the Hanke Iron Works. This position he resigned at the time when he became president and general superintendent of the Guaranty Iron & Wire Works, in January, 1917, and his technical ability and progressive policies have already shown pronounced influence in pushing the enterprise forward to still greater success.

Mr. Ross has made a remarkable excellent record in connection with industrial enterprise, and since he was a youth of seventeen years there has been no interval in which he has not been found in active service as foreman or superintendent. A true humanitarian and a man whose experience has covered a wide scope, Mr. Ross has been fully in sympathy with the cause of labor, has gained and retained the confidence and esteem of those working under his direction, and his success as an executive has been largely due to the attitude which he has maintained in

FERGUSON FOUNTAIN OF THE GREAT LAKES

Erected at the south side of the Art Institute of Chicago. The upper figure represents Superior, in the center is Huron, at the left is Michigan, at the right is Erie, and the figure kneeling is that of Ontario. Cast in bronze by Jules Berchem

this respect. He has achieved success through his own ability and efforts, is one of the world's productive workers, and though he is president of the Guaranty Iron & Wire Company he does not believe in directing affairs from the sanctuary of a finely appointed executive office, but is here and there and everywhere about the factory, giving counsel and advice and keeping in close touch with all details of operation,—an expert and authority who knows standards and insists that all products be the maximum in point of perfection. Though he has never had desire to enter the turbulence of practical politics, Mr. Ross gives loyal allegiance to the republican party and takes active interest in those things that make for good government.

In August, 1892, was recorded the marriage of Mr. Ross to Miss Rose Rohan, who was born in Wisconsin but who was a resident of Chicago at the time of her marriage. Mr. and Mrs. Ross have one child, Maybelle.

WILLIAM A. GALVIN

William A. Galvin, secretary and general manager of the Guaranty Iron & Wire Works, described in a foregoing article, is one of the vital and progressive business men of the younger generation in his native city, his birth having occurred in Chicago on the 26th of June, 1884; he is a son of James and Elizabeth (Daly) Galvin. Mr. Galvin profited duly by the advantages of the public schools and later took special courses in the Armour Institute of Technology and the Chicago Art Institute, his application in each of these institutions being in connection with architectural science and art. His initial business experience was acquired through his association with William Sween, a successful Chicago architect, and in the offices of Mr. Sween he served two years as a draftsman. At the age of nineteen years Mr. Galvin took a position as draftsman for the American Iron & Wire Company, and later he resigned to accept a similar position with the Hanke Iron Works. He remained with this concern two years, and his service was principally in the capacity of estimator and salesman. After severing his alliance with this company Mr. Galvin was for one year a salesman for the Western Architectural Iron Company, and he then became one of the founders of the Guaranty Iron & Wire Works, of which corporation he has since served as secretary and general manager. The company has membership in the Chicago Iron League and the Chicago Employers' Association.

In 1910 was solemnized the marriage of Mr. Galvin to Miss Anna Cunningham, of Chicago, and they have two children,—Robert and Elizabeth.

AMERICAN ART BRONZE FOUNDRY

It is specially gratifying to be able to present in this publication a brief review of this noteworthy institution, which is the only one of its kind in Chicago and one of very few in the United States. Its founder and owner, Jules Berchem, has been able through his technical skill and fine appreciation, to make large

and enduring contribution to art advancement in the country of his adoption and in his finely equipped bronze foundry are to be found the best of provisions and facilities for the casting of the best types of life-size and colossal statuary, busts, tablets, bas-reliefs, etc. In different parts of the Union are to be found magnificent pieces of bronze sculpture that attest the ability and splendid workmanship of Mr. Berchem in his special field of art production, and he has gained the highest commendation and the definite support of leading American sculptors and architects, prominent among the latter being the distinguished Chicago sculptor, Loredo Taft. Among the many important monuments cast by the American Art Bronze Foundry—and all of United States standard bronze—may be mentioned the following, many of these being among the largest in the United States: Ferguson Fountain of the Great Lakes, a beautiful and gigantic bronze group placed near the south facade of the Chicago Art Institute; Illinois monument at Anderson, Georgia; figures and embellishments of the great Soldiers' & Sailors' Monument in the city of Indianapolis, Indiana; naval monument at Vicksburg, Mississippi; "Defense of the Flag" group, Chickamauga, Tennessee; Kosciusko monument, Chicago; equestrian statue of St. Louis, at St. Louis, Missouri; the great lions at the entrance of the Chicago Art Institute; New Jersey soldiers' and sailors' monument, Jersey City, New Jersey; Wichita, Kansas, and Princeton, Illinois; the Kosciusko monument in the city of Washington, D. C.; the statue of Justice (in silver) for the state of Montana.

The American Art Bronze Foundry, at 4921-31 West Lake street, Chicago, represents the admirable results achieved by its honored founder and owner, who initiated operations in Chicago upon a modest scale, in the year 1886, and whose reputation in his field of art enterprise has become not only national but also international,—and that without the expenditure of any fund for advertising exploitation. Of the career of Mr. Berchem brief review is given in the following context.

JULES BERCHEM

Jules Berchem was born in the city of Paris, France, on the 9th of December, 1856, and is a son of Gean Berchem, who was a piano manufacturer by vocation. The education of Mr. Berchem has been principally that gained through personal application and through practical experience, as his youthful advantages were very limited. He attended school in his native city until he was nine years old and then was indentured or apprenticed to learn the trade or profession of art moulding. In his native city he eventually became recognized as a master in his profession, and there he continued his activities until 1885, when he came to the United States and found employment at his art in New York City. Eighteen months later, in 1886, he came to Chicago. His capitalistic resources were extremely limited but his ability in his profession attracted the attention of a generous member of the Chicago fire department, and this appreciative friend insisted that Mr. Berchem should engage in business for himself, his faith in the young artist being such that he volunteered to take from his savings a sufficient amount of money to enable Mr. Berchem to begin operations. Accepting this kindly proffer, Mr. Berchem opened a small art foundry at 42 Michigan street, and his first order was for the casting of a

JULES BERCHEM

statue of Schuyler Colfax, who had been vice-president of the United States during the first term of President Grant. This statue was erected on the grounds of monument circle surrounding the magnificent soldiers' and sailors' monument in the capital city of Indiana. So perfect was his work in the casting of this large figure that Mr. Berchem's business began forthwith to expand, and his next important order was for the casting of statues of police officers killed in the memorable Haymarket riot in Chicago, the monument being erected on the site of this historic Chicago conflict. At the time of the World's Columbian Exposition, in Chicago, in 1893, Mr. Berchem had opportunity for augmenting his professional reputation by the production of a masterpiece, the celebrated statue of Justice which was cast in native silver for the state of Montana and made a part of the exhibition of that commonwealth at the exposition. For this art product Mr. Berchem received not only honorable mention but also a diploma from the official board of the exposition. His fame was further enhanced by his casting of the great bronze lions that adorn the entrance facade of the Chicago Art Institute, and since that time many and important have been his contributions to highest form of bronze art productions in America.

In his original location Mr. Berchem continued his operations until 1899, when he removed his foundry plant to Grand Crossing, from which suburban district he later removed to still larger quarters, at 486 West Fulton street. At this location he remained until 1905, and in the meanwhile he had achieved work that insured the permanency and growth of his business, so that at this juncture he purchased a vacant tract of land at 4921-31 West Lake street, where he erected his present modern foundry and manufactory, the plant being up to the highest standard in equipment and general facilities and giving an aggregate floor space of thirty-two hundred square feet. The buildings occupy only a portion of the appreciable ground space, but the remaining part of the site is used advantageously in connection with the business. In connection with his enterprise Mr. Berchem retains a force of from twelve to fifteen assistants, and he is a recognized enthusiast in his profession and also in all things pertaining to fine art expression and achievement. He is a life member of the Chicago Art Institute, is a Republican in his political allegiance and his religious faith is that of the Catholic church.

In 1895, in Chicago, was solemnized the marriage of Mr. Berchem to Miss Jeanne Bridoux, who likewise was born in the city of Paris, France, and both have a wide circle of friends in Chicago. Their only child, Alfred, was born while they were residing at Grand Crossing, the date of his nativity being November 28, 1896. In addition to the advantages of the public and parochial schools of Chicago he took a four years' preparatory course in the great Notre Dame University at South Bend, Indiana, and in the summer of 1916 he initiated his apprenticeship in the American Art Bronze Foundry, under the able and earnest preceptorship of his father.

CHICAGO DIE & SPECIALTY COMPANY

At 1950 West Ohio street is established the excellently equipped manufacturing plant of this company, which figures as the successor of the Chicago Die

Supply House, which was founded in 1914, by Stevan Kobzy, president of the present company. As an expert machinist Mr. Kobzy began operations in a small shop at 1941 West Ohio street, his financial resources being limited but his reputation as a man of sterling character and as a high-class mechanic being well established, so that he was not lacking for sturdy fortification when he thus essayed independent operations as a manufacturer in Chicago. In the handling of job work, especially along the line of experimental machine building, he soon developed a prosperous business and the continuous expansion of the same eventually demanded the obtaining of a larger factory space and the employment of efficient assistants. In consonance with his plans for providing properly for the growing business Mr. Kobzy, on the 9th of May, 1916, effected the incorporation of the Chicago Die & Specialty Company, with a capital stock of twenty-four hundred dollars. He became the president and principal stockholder of the new company, and John Stoweck was made secretary. Six months later the latter's interest was purchased by Mr. Kobzy, and he has since been practically the sole owner of the business. At the time of the incorporation the company gave employment to five skilled mechanics, and within the comparatively short intervening period it has been found necessary to increase the force fourfold, the while the business has been extended outside mere local limitations, as shown by the fact that the company now receives regular patronage from representative concerns in Detroit, Michigan; Valparaiso, Indiana; Rochester, New York, and other industrial centers.

In the mechanical equipment of his factory Mr. Kobzy has spared no expense in installing the most modern machinery and accessories, and it is specially worthy of note that so excellent has been the work produced under the direct supervision of Mr. Kobzy in the manufacturing of the machinery of aeroplane engines that the same has attracted the attention of United States government experts incidental to the construction of aeroplanes for service in the great war in which the nation has become involved. In this factory is manufactured a special line of dies and hardware specialties, which are handled by large jobbing houses in different cities, and the business, within a period of less than three years, has been developed from a little enterprise of merely local order to one that has attained to an average annual aggregate of fully thirty-six thousand dollars.

STEVAN KOBZY

Stevan Kobzy, founder and president of the Chicago Die & Specialty Company, was born in Buda-Pest, Hungary, on the 3d of October, 1884, and there he attended school from the age of six years until he was a lad of twelve years, when he began his apprenticeship to the trade of machinist, his term of four years having been served without his receiving any pay, in accordance with the custom obtaining in his native land. He became an expert machinist under this careful discipline, and was but sixteen years old when he thus acquired status as a skilled journeyman at his trade. In the same year, 1900, he went to Vienna, Austria, where he was employed for the ensuing eighteen months. With a desire to broaden his experience he then went to Berne, Switzerland, and there he found

employment in one of the greatest of European manufactories of mechanical instruments. Within the year and one-half which he passed in this manufactory Mr. Kobzy gained most valuable experience and perfected himself as a technical mechanic. Upon leaving Berne he went to Hamburg, Germany, where he found employment in the shipyards of the Blohm & Voss Company, the largest shipbuilders of Germany. After being here employed two years he joined the German marine service in the capacity of assistant engineer, and he acquired an excellent knowledge of engineering during his two years' service with the marines.

In 1910 Mr. Kobzy immigrated to America and settled in the city of Pittsburgh, Pennsylvania, where he found employment as a machinist in the great manufacturing establishment of the Westinghouse Company. Sixteen months later he came to Chicago and obtained employment with the Boland Machinery Company. On year later he took a position in the tool department of the machine shops of the Chicago & Northwestern Railroad; the following year found him in the employ of the Western Electric Company; later he worked as an expert mechanic in the shops of the Kellogg Switchboard Company; and his final service prior to establishing his independent business enterprise was in the employ of the Benjamin Electric Company. A young man of fine technical ability and of great energy and ambition, Mr. Kobzy has worked his way forward to the goal of success and well merits the prosperity that has attended him in his vigorous and independent business undertaking.

In 1910 Mr. Kobzy wedded Miss Betha David, of Hamburg, Germany, and they have one daughter, Alice, who was born in Chicago.

AUTO TRUCK STEEL BODY COMPANY

In the operations of this corporation is represented one of the new and vigorous industrial enterprises of Chicago and so rapid and substantial has been the attending development of the business that many of the large and representative motor truck manufacturers of the United States use the steel bodies manufactured by the Auto Truck Steel Body Company as exclusive part of standard equipment.

The Auto Truck Steel Body Company was organized Oct. 9, 1916 incorporated under the laws of Illinois, with officers as here noted: Hervey R. Dailey, president; Walter H. Barry, secretary; and Frank E. Kahl, treasurer. The new corporation purchased property with a frontage of two hundred and twenty-seven feet on Carroll avenue and with a depth of one hundred feet. On this site, 3028-46 Carroll avenue, was erected a substantial industrial building of most modern type, the same giving an aggregate floor space of nine thousand square feet. The manufacturing of the company's high-grade models of steel bodies for motor trucks was initiated with a force of only five men, and so great was the success attending the introduction of the products that a remarkable and rapid growth marked the new enterprise, this being effectively demonstrated in the fact that while the output for first month, that of April, 1917, was but forty-eight bodies, the succeeding month demanded the production of one hundred and twenty-seven; June recorded the manufacturing of one hundred and seventy-four;

July gave a record of two hundred; August showed an increase to two hundred and fifteen; and September, the month immediately preceding that in which this article is prepared, recorded the manufacture of two hundred and fifty-five. The bodies are sold to automobile manufacturers in all parts of the United States; the corps of factory operatives in October, 1917 numbers nearly one hundred; and there is assured augury that the enterprise will become one of the large and substantial industries of the western metropolis. Particular interest attaches also to the fact that the company has expanded its sphere of operations by instituting the manufacturing of an improved type of soup kitchens specially designed for military uses and that twenty-six of these kitchens have already been purchased by the United States government incidental to preparations for participation in the great European war. This department of the enterprise is certain to become one of large importance in connection with American military operations.

The Auto Truck Steel Body Company manufactures many varieties of steel truck bodies.

HERVEY ROY DAILEY

Hervey Roy Dailey, president of the company described in the foregoing article, is one of the vigorous, alert and progressive business men of the younger generation in Chicago and is making an admirable record in industrial circles. He was born at Wilson, Niagara county, New York, on the 27th of November, 1877, and is a son of Samuel M. and Louis Arletta (Morgan) Dailey. In the public schools of his native place Mr. Dailey continued his studies until he had availed himself of the advantages of the high school, and in 1899 he came to Chicago, with a well defined determination to obtain employment and gain for himself a foothold in the business world. He obtained a position as accountant in the office of the Charles H. Slack Company, then a substantial wholesale and retail grocery concern, and two years later he made advancement by taking a similar but more lucrative position with Dean Brothers & Lincoln. After four years of effective service as an accountant he obtained the post of financial and credit manager for the John R. Thompson Restaurant Company, with which representative Chicago corporation he remained three years. He then accepted a position as salesman for the Variety Manufacturing Company, and during his association with this company he familiarized himself with the manufacturing of a varied line of iron and steel products, including automobile bodies. He continued his alliance with this company for seven years, when he effected the organization and incorporation of the Auto Truck Steel Body Company, of which he has since been the active and resourceful executive head the success of the enterprise under his direction being duly shown in the preceding article, descriptive of the company. Mr. Dailey gives loyal allegiance to the republican party, is affiliated with the Masonic fraternity and the Benevolent & Protective Order of Elks, and he finds his chief recreation in the game of golf and in indulging his enthusiastic interest in the national game, base ball.

December 13, 1900, recorded the marriage of Mr. Dailey to Miss Helen Wilhelmina Oosterveer, of Grand Rapids, Michigan, and they reside at 7702 Eggleston avenue.

SCHWEITZER & CONRAD, INC.

In the great domain in which electricity is given application to the most important and diversified functions of practical utility the corporation whose title initiates this paragraph has given numerous and most valuable contributions of special devices of original type and intrinsic superiority, and the concern has prestige as one of the representative factors in the electrical industrial field. The essentially modern factory of the company is established at 4431-39 Ravenswood avenue, and here are centered most progressive activities in the manufacturing of electrical protective devices, including fuses of one hundred and fifty to one hundred and fifty thousand volts; portable high-voltage switches; automatic switching units; lightning arresters; primary cutouts; fuse mountings; fused switches; disconnecting switches; choke coils; relays; voltage detectors; recording synchroscopes; reversephase relays; and other important specialties that have set the ultimate standard of general excellence and efficiency. The most significant voucher, for the efficiency of the products, is that given in the fact that within a period of about seven years there has been developed, from a most modest inception, a business that has attained to an annual aggregate in the hundreds of thousands of dollars. In the handling of the goods manufactured by Schweitzer & Conrad, Inc., in Canada and Great Britain, the Canadian licensee is the Economy Fuse & Manufacturing Company, Ltd., of Montreal, and the British licensee is Electric Control, Ltd., of London and Glasgow. While the limitation of this article and the necessary circumscribed province of the publication itself, make impossible the entering of technical descriptions concerning the various products of Schweitzer & Conrad, Inc., such information is made readily available through catalogues and bulletins issued in a direct way by the corporation itself.

The corporation dates its inception from the year 1910, when Edmund O. Schweitzer and Nicholas J. Conrad, both electrical engineers of broad experience, formed a partnership and engaged in the manufacturing of high-voltage fuses. These gentlemen are the inventors of many important electrical devices, and their engineering and operating experience in central station service, is invaluable in the manufacture of electrical protective devices. The business was incorporated in 1914, with a capital stock of ten thousand dollars, with the following executive officers: Edmund O. Schweitzer, president, and Nicholas J. Conrad, secretary and treasurer. The corporation has a membership in the Illinois Manufacturers' Association.

The substantial expansion of the business of Schweitzer & Conrad, Inc., led to the removal of the plant, in 1914, to larger quarters, at 1770 Berteau avenue, where requisition was made for larger floor space, and where the mechanical and general equipment of the factory was notably amplified, the while the force of employes was increased to twenty workmen. Basing the auguries for future growth on the splendid record of the past, the principals of the firm soon felt themselves justified in making provision for the erection and equipment of a modern industrial building especially designed for their purposes. Property was purchased at 4431-39 Ravenswood avenue, and here the 1st of February, 1917, was recorded the completion of the company's present factory, which is conceded to be one of the model plants of the kind in the entire United States, the equipment throughout being of the most modern type, and special care having

been used in making the plant perfect in sanitary arrangement and other facilities for the health and comfort of employes. The modern saw-tooth roof construction gives the best of lighting through the daylight hours. The floor of the structure is of maple covered concrete, and toilets and lavatories are of the best modern equipment. This attractively designed industrial plant, in a semi-residential district of Chicago, gives fifteen thousand square feet of floor space and in the establishment an average force of about forty skilled operatives is now employed. The goods manufactured by this concern now find ready demand in all sections of the United States and a substantial trade has been developed also in Canada and Great Britain, while the export business in Spain, New Zealand, Australia, Japan, China and South American countries shows a constantly cumulative tendency.

EDMUND O. SCHWEITZER

Edmund O. Schweitzer, president of the corporation described in the foregoing context, was born in Chicago, on the 10th of October, 1875, and after having completed the curriculum of the public schools he entered Purdue University, at Lafayette, Indiana, in which institution he completed a course in electrical engineering and was graduated in 1898, with the degree of Bachelor of Science. Soon after his graduation he entered the employ of Commonwealth Edison Company, of Chicago, and later he did post-graduate work of a technical order at a leading university in Germany. With the Commonwealth Edison Company Mr. Schweitzer's first service was in the inspection department, and later he was transferred to the testing department. From the position of testing engineer he was promoted to that of chief testing engineer, in 1908, and of this position he is still the incumbent. He is a member of the American Institute of Electrical Engineers, the National Electric Light Association and other organizations.

In the year Mr. Schweitzer wedded Miss Lillian Merz, and they have three children,—Emily, Edmund and Evelyn.

NICHOLAS J. CONRAD

Nicholas J. Conrad, secretary and treasurer of Schweitzer & Conrad, Inc., was born at Port Washington, Wisconsin, on the 21st of March, 1883. In the public schools of his native city he continued his studies until he had completed high school, and he then entered the University of Wisconsin, at which institution he completed a course in electrical engineering, and was graduated as a member of the class of 1905 with the degree of Bachelor of Science. After leaving the university Mr. Conrad came to Chicago and found employment in the operating department of the Commonwealth Edison Company, and six months later was transferred to the testing department. With this department he held a responsible position until July 15, 1917, since which date he has given his entire time

and attention to the affairs of the corporation of which he is secretary and treasurer, as previously noted. Mr. Conrad is a member of the American Institute of Electrical Engineers, the National Electric Light Association, and other organizations.

In the year of 1910 Mr. Conrad wedded Miss Irene E. Billups, of Chicago, and they have one child, John Robert.

WILLIAMSON GLUE & GUM WORKS

As a representative of the jobbing trade in glue products William A. Williamson established in 1895 a small office and wareroom in the Northwestern building, on Lake street, and this modest enterprise constituted the nucleus around which has been developed the large and important manufacturing and distributing industry conducted under the title of the Williamson Glue & Gum Works, the well ordered manufacturing plant and business headquarters of which are now established in a modern building at 220-222 West Huron street. Through long experimentation and an experience involving many discouragements and adverse conditions, the founder of the enterprise finally produced adhesive materials of broad and practical utility and the output of the present factory includes articles that are recognized as the ultimate in excellence, including liquid glue, mucilage, library paste and similar products that are extensively used throughout the United States.

In his original quarters Mr. Williamson initiated a jobbing trade in the handling of glue and by the closest application and most strenuous work, with a very small force of assistants, he finally placed the business on a secure footing, though its growth was slow during the initiatory period of operations. At the expiration of two years he removed his business to larger quarters, at 117 North Canal street, where he obtained sufficient storage space to accommodate one hundred and fifty barrels of animal glue and also made due provision for office facilities. The output was sold entirely within the local territory tributary to Chicago and animal glue continued to be utilized exclusively for some time thereafter. In the meanwhile Mr. Williamson's investigation and experience had been such that he had become convinced that within a limited time such basic animal glue was destined to become too expensive for economical production and that some substitute for the same must needs be provided. He continued operations as a jobber in glues for some time when, after careful consideration of ways and means, he decided to engage in the manufacturing of liquid glue. After formulating his plans he leased a three-story building at 41 North Morgan street, and there he began the production of a liquid glue to which he gave the trademark name of 'Usticol,'' the product being made entirely of vegetable matter and representing the direct result of a long period of research and experimentation on his part. At this juncture it is interesting to note that he was the first man west of New York city to have instituted the manufacture and sale of a glue of this nature. His formula proved successful in its practical application, and the ''Usticol'' now finds commercial sale in all parts of the Union. In his experiments and original production of glue by the new process Mr. Williamson

encountered many obstacles and technical difficulties, but he resolutely pressed forward until the success which crowned his efforts was of unqualified order. In this connection it may be stated that the first twenty-five barrels of glue which he manufactured and sold proved a failure, and the product was returned to him. He often worked at his experiments until long after the midnight hour and ineffective results but spurred him to renewed effort, the ultimate result being that he perfected the formula and process that have made his product a standard of excellence and general efficiency in its sphere of application. The business of the company has now attained to an average annual aggregate of more than one hundred thousand dollars,—a fact that is specially significant when it is recalled that in the incipient stage of the enterprise the factory was a small establishment with but three thousand square feet of floor space and with a force of only five employes retained for the manufacturing and marketing of the product.

In 1913 removal was made to the present headquarters, where is utilized a floor space of more than six thousand square feet and where the force of employes averages about twenty, this advancement having been compassed within the period of a very few years. In 1917 the enterprise was amplified by adding the manufacturing of a very superior library paste, the same being marketed under the name and trademark of "Standard" and well meriting this title. This product is put up in single gallon stone crocks only and its use insures definite economy on the part of large buyers, the product having been consistently designated as "the best and cheapest library paste on the market."

In 1914 Mr. Williamson effected the incorporation of his business under the present title, the Williamson Glue & Gum Works.

WILLIAM A. WILLIAMSON

William A. Williamson, founder and president of the Williamson Glue & Gum Works, was born at Quincy, Illinois, on the 21st of June, 1856, and is a son of Washington and Amanda M. (Belt) Williamson. His attendance in the public schools of his native city continued until he was fourteen years of age, when he entered upon an apprenticeship to the carpenter's trade, under the direction of his father, a leading contractor and builder in Quincy. Before he had attained to his legal majority he was admitted to partnership in his father's business, and in 1877 the family removed to Waco, Texas, where the father and son continued in the contracting and building business for the ensuing two years. After his return to his native city Mr. Williamson there continued in the work of his trade for several years, but he became impressed with the belief that better opportunities were offered in connection with manufacturing enterprise. Under these conditions he gained his first experience in the glue business, by entering the employ of a large glue manufacturing concern of Quincy and St. Louis. He continued in the employ of this firm six months, during which he acquired a good working knowledge of the details of manufacturing glue from animal matter. Upon severing his association with the firm Mr. Williamson came to Chicago and obtained a position as salesman for the American Glue Company, one of the largest concerns of the kind in the west, his primary reason for assuming this relation

being to acquire an intimate knowledge of the commercial phases of the business. He continued with this company for eight years and made a record as one of its best sales representatives, the while he gained a wide acquaintanceship in the trade and thus fortified himself for the independent enterprise when he established himself in business as a jobber in glue products, his constructive and progressive business career since 1895 being adequately outlined in the foregoing review of the history of the Williamson Glue & Gum Works.

Mr. Williamson is an influential and representative figure in connection with the line of industrial enterprise with which he is identified and is a popular member of the Chicago Glue Club, of which he has served as president. His political support is given to the republican party, he is affiliated with the Masonic fraternity, the Royal Arcanum, and the Royal League, and he holds membership in the Traveling Men's Protective Association and the Rotary Club of Chicago.

At Quincy, Illinois, on the 12th of May, 1878, was solemnized the marriage of Mr. Williamson to Miss Addie Cholmondelay, who was born in the state of Tennessee, and the one child of this union, Ethel, who remains at the parental home, was born in the city of Louisville, Kentucky.

THE GOLDEN RULE CUTLERY COMPANY

In the manufacturing of high-grade cutlery this representative Chicago corporation has gained precedence that marks it as one of the most important concerns of its kind in America. In its special function of manufacturing photo pocket knives the company maintains the only factory devoted to this productive industry in the entire middle west, and the manufacturing plant is uniformly conceded to be the largest and best equipped of its kind in the United States. Like many another of the important industries of Chicago that of the Golden Rule Cutlery Company had a modest inception, and its wonderful growth has been the diametrical result of the progressive commercial policies brought to bear and the high standard maintained in all products. The Golden Rule pocket cutlery is a recognized standard of superiority in quality, finish and design, and in no instance is any deviation from this high standard permitted. In the extensive production of fine pocketknives with most attractive transparent handles with enduring photograph designs displayed through the material, the company has developed a commercial enterprise of broad scope, and a definite guaranty is given in connection with every product sent forth from the new and modern plant of the company. All Golden Rule pocketknives are made to the order of the purchaser, through the medium of responsible agents in all sections of the United States, and in every detail of manufacturing insistent requirement is made for the best quality of material, the most perfect workmanship and the most attractive designs. In the handles of these popular pocket knives are effectively displayed the name, miniature photographic portrait, lodge badge or other consistent reproduction demanded by the owner, and thus distinct individuality is conserved in the product, each knife being virtually a means of identification for its owner. These pocketknives are made in many different designs, with a variation in shape and size of blades that will meet every possible

demand, and they constitute the ultimate conception of artistry and value in the production of one of the most necessary and useful of personal belongings. The catalogue and other descriptive brochures issued by the company give ample details concerning the manifold types of photo pocketknives manufactured, and in its new and admirably equipped factory the company has extended its manufacturing functions to include the production of various specialties in cutlery, including manicure instruments, razors, scissors and shears, table and kitchen cutlery, etc., and in all departments the same high standard in production is insistently maintained, so that the output of the factory constitutes in itself the most effective of advertising and commercial reinforcement.

The business of the Golden Rule Cutlery Company was founded in the year 1902, when Charles S. Tate began on a small scale the manufacturing of pocketknives with transparent handles for the display of photographs or other designs. The original factory was at 817 West Division street, and the success that attended the new industry soon led to the expansion of its facilities and the amplifying of its commercial functions through the medium of incorporation of a stock company, in 1904. Charles S. Tate became president of the company which he had thus founded.

Under the control of the new corporation the production of the special photo pocketknives was greatly increased, and it became necessary to obtain larger quarters for the factory. In 1904 removal was made to 9 River street and here the available floor space was less than one thousand square feet. At this period the capital enlisted in the enterprise was only five thousand dollars and the number of employes was only twelve. In 1906, to meet the constantly increasing demands placed upon the plant, removal was made to 152 West Lake street, where two thousand square feet of floor space was acquired and where the force of skilled artisans was increased to twenty. Two years later further expansion of facilities became imperative, and four thousand square feet of floor space was obtained in a building at 552 West Lake street, where the corps of employes was increased to thirty persons. Here operations were continued until the erection and equipment of the company's present large and finely equipped building, which was designed and constructed specially for the uses to which it is applied and which is one of the distinctly modern industrial buildings of the great western metropolis. This new plant, to which removal was made in the summer of 1916, is eligibly situated at 212-214 North Sheldon street, and it affords twenty thousand square feet of floor space. The building was constructed under the direct supervision of Homer E. Holsinger, the vice-president and general manager of the company, and in its mechanical equipment and subsidiary facilities the plant represents the best in modern factory provisions. The building is of brick construction, is three stories in height and is specially notable for having the best of lighting provisions through the effective placing of its many windows.

At the time of this writing, in 1917, the Golden Rule Cutlery Company employes in its factory a force of seventy skilled operatives, and the trade of the company has been extended not only into all sections of the United States, but also into European countries, with regular shipment of products into Mexico and the Canadian provinces, as well as to the Philippine Islands, Hawaii and Cuba. In 1906 the business of the company aggregated twelve thousand dollars, and from that it has been expanded until the average annual business is now

H. E. HOLSINGER

GOLDEN RULE CUTLERY CO.

in excess of one hundred and twenty thousand dollars, the factory having a capacity for the output of one thousand dozens of its cutlery products each week.

Upon the death of Charles S. Tate, the founder of the company, in 1914, a reorganization was effected, and Nels Rylander has since been the president of the corporation, though he takes no active part in the practical management of the enterprise. Homer E. Holsinger, the vice-president, has been the active executive head of the business since 1902 and it has been in large measure due to his energy, initiative and well ordered policies that the industry has attained to its present large and well merited success. Nels Rylander, president of the Golden Rule Cutlery Company, was born and reared in Sweden and has been a resident of Chicago since he was a youth of twenty years. He has achieved through his own energy and ability a prominent place in connection with the industrial and commercial activities of the city and has been for many years the general sales representative of the John A. Tolman wholesale grocery house.

HOMER E. HOLSINGER

The vice-president and general manager of the Golden Rule Cutlery Company was born in LaGrange county, Indiana, on the 24th of November, 1881, and is consistently to be designated as one of the vital and progressive young captains of industry in the western metropolis. His higher academic education was rounded out by a course in Hillsdale College, at Hillsdale, Michigan, and after his graduation in this institution he took a thorough course in a business college at Huntington, Indiana. In 1902 he came to Chicago and assumed a clerical position in the offices of the Chicago, Burlington & Quincy Railroad, but four months later he resigned his position and purchased Frederick Eastman's interest in the Golden Rule Cutlery Company, of which he has since been the vice-president and to whose effective system of advertising and general exploitation the substantial and normal growth of the business has been mainly due.

VICTOR PETERSON & COMPANY

With broad previous experience of a technical order, Victor Peterson engaged independently in the printing business in 1910, and from the beginning he specialized in work utilizing his patented color process, the result of prolonged and careful research and experimentation on his part, the United States patent on the invention having been granted in 1908. From stock plates,—half-tone, zinc etching or electrotype, by this process printing can readily be run in colors from the single plate, and the results are remarkable in both a practical and artistic sense, as by this means art color work is placed within the reach of all users of printing, the economy of the process as taken in contradistinction to the color plate which previously afforded the only means of such reproduction, being almost inconceivable on the part of those who have not seen the result of the Peterson

system. From a recent number of the Inland Printer, a publication which represents the finest results in connection with modern printing art and trade, are taken the following pertinent quotations:

"On page 424 of the Inland Printer for June, 1914 appeared the unique specimen of color-printing from a single half-tone plate, done by the patented process of Victor Peterson, 730 North Franklin street, Chicago. The process has a distinct place in meeting the requirements of many customers of printers, and gives a very wide range of usefulness in tints and zinc etchings as well as open half-tones. The printer's customer who requires a touch of color in his catalogue, booklet or circular, but is not prepared to purchase color plates, can be supplied by this process with an effort which is both effective and tasteful, at a minimum cost. Mr. Peterson is prepared to do the work for the trade. His personal skill and experience are at the service of the printers at trade prices. The process rights may also be secured under contract rates covering the license to use and the instruction in how to use the process effectively, this offers to printers a recourse that they may find very useful at almost any moment, and to employing printers writing under their own letter heads, samples will be sent upon request, and prices quoted. This is a voluntary contribution to Mr. Peterson's character and skill."

Mr. Peterson initiated his independent printing business with an available capital of only two hundred and fifty dollars, but with firm confidence in the ultimate triumph of his invention. At 210 South Water street he rented a room one hundred feet square, and the original working force comprised only himself, his son Arthur and one press-feeder. At this location operations were continued from 1908 to June, 1910, when Mr. Peterson obtained from outside sources a capitalistic co-operation that made possible the expanding of the business. It was at this time that removal of the plant was made to the present headquarters, at 730 North Franklin street, where has been established a thoroughly modern and well equipped commercial printing plant. The business is constantly extending its province and the firm receives a large and representative supporting patronage on the part of many of the leading jobbing, manufacturing and wholesale institutions of Chicago. Thus Mr. Peterson has been rewarded for his confidence in the ultimate recognition of his patented color process, and is recompensed for the discouragements and reverses that attended his determined efforts to introduce the process and gain to it the legitimate commercial recognition to which it is eminently entitled. He has made a most valuable contribution to art-craft printing and has achieved in the face of obstacles a distinctive success.

VICTOR PETERSON

The founder of the business whose history is outlined in the preceding article was born in Ostergotland, Sweden, in 1868, and there he received his early educational discipline. He was about fourteen years old when he accompanied his widowed mother to the United States and the family home was established in Chicago. His ambition led him to take a night school course in a business college. He then proceeded to earn his own living and to assist in providing for his

devoted mother. In 1887 he entered upon an apprentice-ship in the printing establishment of the N. B. Barlow Printing Company, with which he continued his association four years. He then, in 1891, obtained a position as pressman in the establishment of the George M. D. Libby Printing Company and five years later he severed this alliance and entered in partnership with James Gilbert. The firm of Gilbert & Company had its printing office at 117 North Fifth avenue, and there Mr. Peterson continued his activities until 1901, when he retired from the firm. After thus selling his interest in the business he removed to the vigorous new town of Idaho Falls, Idaho. One year later he returned to Chicago and secured a position as salesman for a leading manufactory of colored post cards. One year later he resigned this position and formed a partnership with C. R. McCall, under the title of the C. R. McCall Printing Company. With this concern he continued his alliance until he founded his present independent printing business, and in the meanwhile he had invented and patented his wonderful process of color printing from a single plate. Mr. Peterson has been distinctively a man of indefatigable industry and success and has finally crowned his efforts in no uncertain way. He is affiliated with Downers Grove Lodge, No. 824, Ancient Free and Accepted Masons, and also with the Royal League. His political allegiance is given to the republican party and he is emphatically loyal to and appreciative of the city that has been his home the major part of the time since his boyhood.

In 1892 was recorded the marriage of Mr. Peterson to Miss Helma Johnson, of Chicago, who like himself is a native of Sweden. They have three children, —Arthur, Lambert and Grace. The elder son is associated with his father in business, as a member of the firm of Victor Peterson & Company.

INDIANA INDESTRUCTIBLE PAINT COMPANY

The name has become a synonym of the maximum achievement in scientific paint making. The modern industrial plant in which the now extensive business of this company is conducted is eligibly located at 864-872 West North avenue, and here are manufactured the highest and most enduring grades of paints, enamels, colors, fillers, etc. This important industrial enterprise conducted by the Indiana Indestructible Paint Company was founded as an Illinois corporation, succeeding an Indiana corporation of the same name and taking over its assets, franchise, etc., in October, 1909, by Thomas F. Otley, who has been president of the company from the time of its incorporation. Operations were instituted on a very modest scale but were based on a product of exceptional merit, so that, with vital and effective commercial policies, the normal growth and expansion of the business was assured. With slight paraphrase are made the following quotations from an appreciative estimate prepared and published by Herman L. Nagel, secretary and treasurer of the company, and the article is specially worthy of perpetuation as a distinct tribute to Thomas F. Otley:

"October, 1916, represented more than the mere seventh anniversary of the founding of the Indiana Indestructible Paint Company,—it marked the passing of seven years since the ideas of Mr. Otley were changed from theory to practice.

While the growth of the business has exceeded the most sanguine expectations, this growth has been the more gratifying by reason of its representing the direct results of the application of certain thorough and progressive policies. Apart from a lifelong experience in the paint business and a host of friends in the trade, Mr. Otley had little in the way of assets, and the first 'factory,' consisting of a modest store building at 1642 Halsted street, formed the original base of operations. For financial reasons it was not possible for Mr. Otley to buy new equipment, and in taking over the building he took over the business and machinery of an old paint company. Such 'good will' as the business included was of little value to the hustling new owner, as what little business was being done consisted of selling such specialties as railroad paint and the like to a limited number of customers, whereas it was Mr. Otley's intention to manufacture a complete line of paints and varnishes for sale to dealers throughout the country. As a matter of fact, at the time when Mr. Otley took the reins, the old company's annual business was less than the present company now does in a single month. Through a lack of proper manufacturing facilities and a strong selling force,—the first essentials of any business,—both due to a lack of financial strength, operations during the first few months were simply a losing game. But his wide experience in the paint business, his forcefulness, his accurate analysis of what paint dealers wanted and what they did not want, enabled Mr. Otley to lay the foundation of his business on a solid rock. The process of building up the business he followed out with integrity. The comparison of the original manufacturing plant with that of the present day offers a forceful indication that there has been and is an indomitable power working along popular lines of enterprise in the paint business. More than that, it signifies clearly that Mr. Otley is a man of his word and always has backed up his standards to the letter. His policy has always been to give the trade value for money, to make a success of doing business fairly and squarely, or quit doing business entirely. Possibly few aside from those who have actually experienced it, understand the gratification that comes to a man who has made big strides in the commercial world. The gratification that one has again demonstrated that 'honesty is the best policy' and the satisfaction that comes with the knowledge that your customers are your friends because they know from experience that you conduct a clean-cut business,—such must be the feelings of Mr. Otley to-day."

In founding his new company Mr. Otley brought to bear marked technical ability and much resourcefulness, though his financial resources were limited. In the initial stages attention was given principally to the manufacture structural-iron paints, but as soon as conditions justified such course the output was made to include a general line of paints, varnishes, enamels, etc. In the first factory only twenty-five hundred square feet of floor space were utilized and at the beginning employment was given to only one expert paint-mixer, the officers of the company applying themselves closely in the manufacturing department. In 1911 the original capital stock of ten thousand dollars was increased to fifty-five thousand, and under the vigorous policies adopted, the enterprise rapidly expanded in scope after the first few months. In 1913 the company leased its present industrial plant on West North avenue, the building being three stories and basement and affording an aggregate floor space of 15,000 square feet. Here the best type of modern machinery and other accessories were provided and with

the growth of the business an additional floor space of seventy-five hundred square feet has been provided. The sales for the year 1910 amounted to twenty-five thousand dollars, and the splendid development of the business is most significantly indicated in the showing for 1918, when the aggregate sales promise to be about four hundred thousand dollars for the fiscal year. The output of the factory is sold largely through the central west, but a substantial trade is developing also in the eastern states, as well as in the extreme west. In the factory employment is given to an adequate force of skilled workmen and eight traveling salesmen represent the company through its trade territory. The principal brands of paint manufactured by this company have been given the name of "Indalastic," and paints are produced for all kinds of service,—for exterior and interior use in buildings, for floors, for wagons, carriages and automobiles, etc., and the fine line of enamels manufactured by the company is inclusive of types made for the best class of work, as is also true of the various stains, fillers, oil colors, distemper colors, varnishes and the celebrated Fullerton paints, which are unconditionally guaranteed for five years. The catalogues issued by the company give full information concerning the varied products and are gladly supplied to all who make application. In all that signifies the best scientific methods in paint manufacturing this concern stands without a peer, and efficiency of service has gained to the company an unassailable reputation.

THOMAS F. OTLEY

Thomas F. Otley, president of the Indiana Indestructible Paint Company, was born in Grand Haven, Mich., and by his own ability and efforts has gained vantage ground as one of the representative and successful business men of Chicago. His advancement in the commercial world has shown his versatility, for he prepared himself for the legal profession and did effective service in the same, his period of active practice having found him numbered among the active members of the Chicago bar. Mr. Otley acquired his early education in the public schools, supplemented this discipline by a course in the Lewis Institute, and he was graduated in the Illinois College of Law. After devoting himself for a time to the practice of his profession his tastes and vitality led him into the domain of commercial achievement. For four years he did most effective service as a traveling salesman for the George E. Watson Paint Company, of Chicago, and he then accepted the position of manager of the Chicago Branch of the Acme White Lead & Color Company, the manufactory of which is established in the city of Detroit, Mich. He retained this position several years and made a record as one of the most successful branch managers ever retained in the employ of this extensive corporation. In 1909 he identified himself with the business of which he is now the executive head and in the upbuilding of the substantial business of which his well ordered policies have been the dominating force.

Mr. Otley is remarkable for his vital energy and progressiveness as a man of affairs and he has achieved large and worthy success in the field of industrial enterprise. He is essentially loyal and public-spirited as a citizen, represents his company as a member of the Chicago Paint, Oil & Varnish Club, The Illinois

Athletic Club and the Chicago Association of Commerce, and he is actively affiliated with the Masonic fraternity, including the Mystic Shrine.

HERMAN L. NAGEL

Herman L. Nagel, secretary and treasurer of the Indiana Indestructible Paint Company, was born in the city of Detroit, Michigan, on the 8th of May, 1884, his father, Louis Nagel, being a successful wagon manufacturer in the fair metropolis of the Wolverine state. In addition to receiving the advantages of the public schools of his native city Mr. Nagel there completed an effective course in the Detroit Business College. At the age of seventeen years he took a position in the shipping department of the Acme White Lead & Color Company, one of the large and important industrial concerns of Detroit. In 1904 the company transferred him to the Chicago branch, where he became assistant office manager. Later he was promoted to the office of office manager, and of this position he continued the efficient incumbent until 1908, when he and his personal friend and business associate, Thomas F. Otley, engaged in the paint brokerage business in Chicago. This alliance continued until Mr. Otley took under control the business of the Indiana Indestructible Paint Company, and Mr. Nagel became associated with him in the new enterprise. He has proved a most able and valued coadjutor of the president of the company and has contributed materially to the development and upbuilding of the substantial and prosperous business. Mr. Nagel is affiliated with the Masonic fraternity and Chicago Paint, Oil & Varnish Club.

JENNET BRIDGE & IRON WORKS

The business was founded March 21, 1903, when an incorporative charter was obtained under the laws of Illinois and under the present title, the officers of the company from the beginning having been Peter Jennet, who is president and treasurer, and M. F. Carr, who is secretary and manager. The new corporation effected the lease of a tract of land at 3541-71 Sheilds avenue, this lease having been issued for a period of fifteen years, and on the site the company promptly initiated the erection of a modern industrial building, sixty-two by one hundred feet in dimensions, in which was installed proper equipment for the manufacturing of structural steel for bridges, buildings, etc. The original force of operatives employed was about twenty men. With the substantial increase in the business in the ensuing years it became necessary to enlarge the factory, and the facilities of the plant are of the most approved modern type throughout. In the yards of the establishment material of heavy type is handled by means of an electric derrick; inside the building are found a well equipped industrial track and air hoist, with capacity for the facile moving of material five tons in weight, and the machinery of the plant is of the most improved order applied to the manufacturing of structural steel, including compressed-air riveters, angle shears, punches, drills and all other accessories demanded in the manufacturing of the

heaviest type of structural steel. The average output of the plant has now attained to an aggregate of twenty-four hundred tons daily, and the present facilities will provide for an output of more than three thousand tons.

In the manufactory of the Jennet Bridge & Iron Works special attention is given to the production of light truss steel, theater dome structural steel and frames for automobiles and steel trucks. In the supplying of general lines of structural steel for bridges the company has extended its business into the most remote parts of the United States, and by it has been supplied steel material utilized in the construction of many large and important buildings in Chicago and elsewhere. In Chicago such service has been given in connection with the erection of the Seventh Regiment armory, at Thirty-fourth street and Wentworth avenue; Arcadia Hall, on Wilson avenue; the Crystal theater, at North and Washtenaw avenues; the Carlo theater, 3400 North Clark street; the Crawford theater, 4730 West Madison street; and the Mulford theater, at Crawford avenue and Mill street. The company has the best of facilities for the devising and producing of special designs to be used in the remodeling of buildings as well as in the construction of new buildings of full or semi steel type. The company has membership in the Illinois Manufacturers' Association and the Building Trades Association of Chicago, its facilities and the large volume of its business marking it as one of the important industrial concerns of the western metropolis.

PETER JENNET

Peter Jennet, president and treasurer of the Jennet Bridge & Iron Works, was born in Germany, in 1860, and in his native land he was afforded excellent educational advantages, including a special course in structural engineering in the celebrated polytechnical institute at Aix-la-Chappelle. In 1881, shortly after attaining to his legal majority, Mr. Jennet came to America and established his residence in the city of Cleveland, Ohio, where he remained three years in the employ of the Buckeye Bridge & Boiler Works. He began as a laborer in the shops and won promotion by his own ability and effective service. He was employed in turn a layer-out, draftsman and traveling engineer, in which last mentioned capacity he represented the company in important work in West Virginia, Kentucky, Michigan and Indiana.

In 1884 Mr. Jennet established his home in Chicago, where he entered the employ of P. E. Lane, a prominent contractor in the building of bridges. In 1893 he represented the firm of Binder & Seifert as engineer in the construction of the machinery and horticultural buildings of the World's Columbian exposition, as well as in the construction of the Schiller building, one of the office and theater buildings of Chicago. Later he was a valued employe of the Halsted Street Iron Works, and with this corporation he continued his alliance until 1903, when he became the founder and executive head of the Jennet Bridge & Iron Works, a concern which has been brought to the forefront in its sphere of industrial enterprise,—a result achieved largely through his technical skill and judgment and his well ordered executive policies. Mr. Jennet is one of the representative captains of industry in Chicago, takes loyal interest in all that

touches the welfare and progress of the city, is a communicant of the Catholic church and is affiliated with the Knights of Columbus.

M. F. CARR

M. F. Carr, secretary and manager of the Jennet Bridge & Iron Works, was associated with Mr. Jennet in the establishing of the business and has been secretary of the company from the time of its incorporation. He was born at Grand Rapids, Wood county, Ohio, in 1859, and he is indebted to the public schools of the Buckeye state for his early educational discipline, besides which he there gained through broad and practical experience his well ordered knowledge of all details of the structural steel business. In 1886 Mr. Carr came to Chicago and engaged in structural-iron building operations, as an employe of the Beaver Falls Bridge & Iron Works, a Pennsylvania corporation. Later he was allied with the Wisconsin Bridge & Iron Works and with P. E. Lane, of Chicago. His broad experience in his chosen field of endeavor has included also his association with Forman, Hansell & Elcock, with the Moran Construction Company, the Kenwood Bridge Company, and the Halsted Street Iron Works, with which last mentioned concern he identified himself at the time of its organization and with which he continued until he became one of the founders of the Jennet Bridge & Iron Works, of which he has been secretary and manager since 1903.

S. OPPENHEIMER & COMPANY

The history of this well ordered industrial concern of Chicago covers a period of half a century (having been established in 1868, and its trade extends not only through the United States and Canada but also into the principal countries of Europe as well as into New Zealand and Australia. The Company's main operative functions are the manufacturing of sausage casings, coupled therewith the manufacturing and selling of sausage-making machinery, packing-house machinery, etc. The Company maintains offices and distributing headquarters in New York City; London, England; and Wellington, New Zealand; the Chicago offices being established at 2700-2706 South Wabash avenue.

The business conducted by S. Oppenheimer & Company was founded in 1868 by Sigmund Oppenheimer in New York City. A few years later the Chicago branch was opened by Oscar Aberle, at 139 South Canal street, who continued his activity in the business until his death in September, 1890. It was in Chicago that the firm first established the manufacturing of sausage casings for the wholesale trade and the general manufacture of sausage.

Under partnership relations Mr. Oppenheimer and his associates continued the enterprise with ever increasing success, and it was not until 1913 that the business was incorporated, the founder having continued his association with the enterprise until his death.

In 1892 a branch was opened in London, England, to take over and continue the export department of the firm.

In 1888 Mr. Gustav Freund came to Chicago, and after the death of Mr. Aberle, became the executive head of the extensive business at the Chicago headquarters, and this gentleman is now president of the corporation of S. Oppenheimer & Company. With the introduction and commercial exploitation of high grade sausage casings manufactured by this concern, the business expanded rapidly in scope and importance, and the concern has continued as one of the most extensive and influential in this field of enterprise. To accommodate the growing business it became necessary in 1911 to erect their present plant which consists of a thoroughly modern industrial building of seven stories, standing on a tract of land 100x150 feet in dimensions.

The corporation has factories spread over various towns of the West and also some in the East.

From the Chicago branch is handled the extensive trade extending from Ohio to the Pacific Coast, and also through the various Canadian provinces and also all their export trade.

The Company manufactures about twelve distinct types of machines used by the great packing-houses and controls the patents on these devices. All manner of machines and supplies in demand by the butchers are handled by the Company, and a specialty is made of their "KKK" Flour, as well as of the celebrated "Boss" brand of spices.

In 1913 the Company was incorporated under the laws of Delaware, the Company being essentially a close corporation, and the personnel of its executive corps being as follows: Gustav Freund, president; Louis Oppenheimer, vice-president; Adolph W. Kempner, treasurer; Clarence L. Coleman, secretary.

The Company has membership representation in the Chicago Association of Commerce, the Chicago Credit Men's Association and the Illinois Manufacturers' Association.

GUSTAV FREUND

Gustav Freund, president of the corporation, associated himself with the corporation as a young man, and, as already stated, in 1888 he came to Chicago and assumed the management of the business from this headquarters. He has been president of the Company from the time of its corporation and is known as one of the representative business men and loyal and progressive citizens of the western metropolis. He is a trustee of the Sinai Congregation, a director of the Chicago Hebrew Institute, president of the Michael Reese Hospital, a director of the Fort Dearborn National Bank and also of the Franklin Trust & Savings Bank. He holds membership in the Illinois Athletic Club, Standard Club, North Shore Country Club, Ravisloe Country Club and the City Club, also in the B'Nai B'Rith.

Louis Oppenheimer is vice-president of S. Oppenheimer & Company. In 1895 he assumed charge of the business in London, England, where he remained until 1916, when he returned to Chicago for a holiday. He is a member of the Standard Club and the Idlewild Country Club.

Clarence L. Coleman is the secretary of S. Oppenheimer & Company, and also general manager of the Chicago branch of business of this important industrial corporation. He was born in the city of Memphis, Tenn., where he received the advantages of the public schools, besides he later received a college training. Mr. Coleman is affiliated with the Masonic fraternity, is a life member of the Chicago Art Institute, and holds membership in the Illinois Athletic Club, Standard Club and the Idlewild Country Club.

Erwin O. Freund, son of the president of the corporation, has been actively engaged in the business about ten years. He assists in the management of the domestic business in Chicago, and is a member of the Ravisloe Country Club and the Standard Club.

CRESCENT DENTAL MANUFACTURING COMPANY

The noteworthy industrial enterprise conducted under the above corporate title was founded in 1896, by Hugo J. Chott, and before the close of the year his brother, Edward L. Chott, became associated with him, the firm having established headquarters at 2214 South Sawyer avenue, where requisition was made for six hundred square feet of floor space and where operations were initiated with a force of only two employes, the specific object in establishing the business being to engage in the manufacturing and repairing of dental instruments and Hugh J. Chott having previously gained several years of practical experience in this line of enterprise, through his association with the Dental Protective Supply Company, of Chicago. In order to demonstrate ideas and policies of his own, Mr. Chott found it expedient to establish a business devoted to general repair work upon dental instruments in addition to instituting the manufacturing of high-grade dental instruments and special appliances. Through the repair department he was enabled effectively to extend his acquaintanceship with dental practitioners and thus to lay a substantial foundation for the new enterprise. Within the year he obtained the personal co-operation of his brother, Edward L., who for this purpose disposed of a well established business in the manufacturing and sale of sporting goods, and from a small beginning the firm gradually developed to prosperous business. The remarkable growth of the enterprise demanded from time to time the expansion of the factory accommodations, and eventually led to the completion of a modern factory building of three stories, at 2214-18 South Sawyer avenue, so that at the original location the business has been continued during the intervening years. On the 23d of June, 1909, further provision was made for the effective conducting of the constantly expanding business by the incorporation of the Crescent Dental Manufacturing Company as successor of the original firm. Edward L. Chott became president of the new corporation; Hugo J. Chott, secretary and treasurer; and Vaclav Chott vice-president.

The amplified factory was equipped with the most modern machinery, including a number of special devices devised and developed by the company, and the products of the factory are sold exclusively to the jobbing trade. The specialties manufactured include an improved and extensively used dental nerve broach, a dental-engine buhr and a list of patented dental accessories, all being turned out

EDWARD L. CHOTT

H. J. CHOTT

under the Crescent trademark, which has become a recognized standard of excellence. The Crescent dental nerve banch has many features of important superiority and the device is remarkable in its versatility and efficiency. The barbs on this broach extends to the apex in exact intervals of gradation, and the device may be bent double and quickly straightened, according to demands in manipulation, and that without breaking or impairment in any way, the integrity of temper being preserved intact. These broaches are manufactured in various sizes and have met with the unqualified approval of the dental profession. The company has the best of facilities for the manufacturing of all kinds of dental instruments, and special devices are manufactured in consonance with the specifications of individual orders.

In 1916 the Crescent Dental Manufacturing Company purchased the stock, patents and good will of the business conducted by J. D. Wilkins, and since that time the company has successfully continued the manufacture of the special brands of dental cements and alloys which had previously been manufactured by Mr. Wilkins.

EDWARD L. CHOTT

President of the Crescent Dental Manufacturing Company, was born in Bohemia and was a child of three years at the time of the family's emigration to the United States. He was reared to adult age in Chicago and here received the advantages of the public schools, besides which he completed a special course in mechanical engineering, at the Lewis Institute, one of the leading Chicago schools of technology. Mr. Chott, entered the experimental and manufacturing department of the Dental Protective Supply Co. in 1893 where he had eight years experience in the manufacture of dental supplies prior to his experience in the manufacture of Sporting Goods. He and his brother have gained substantial prestige as progressive and successful business men of the western metropolis and are broad-gauged and loyal in their civic attitude and associations. Mr. Chott is affiliated with the Masonic fraternity, the Independent Order of Odd Fellows and the Columbian Circle.

HUGO J. CHOTT

Secretary and treasurer of the Crescent Dental Manufacturing Company, of which record has been given in foregoing paragraphs, was about four and one-half years of age when his parents came from Bohemia to America and established their home in Chicago. Here he made good use of the advantages afforded in the public schools and supplemented this discipline by a course in a local business college. Prior to entering upon his independent business career he had been employed in a clerical capacity in the offices of the Chicago & Northwestern Railroad and also had gained fortifying experience through his several years of association with Dental Protective Supply Company, as noted in the preceding article. In the Masonic fraternity he has received the thirty-second degree of the Ancient Accepted Scottish Rite, his maximum York Rite affiliation being with Columbia

Commandery of Knights Templars, besides which he is identified with the Masonic adjunct organization, the Mystic Shrine, and is affiliated also with the Independent Order of Odd Fellows.

FRANK SCAAR & COMPANY

At 1042-1048 West Eleventh street, near Blue Island avenue, are located the well equipped architectural iron works of this substantial and progressive Chicago corporation, which here has the most modern facilities for the production of all kinds of structural and ornamental work in its line. The business, now of large volume, was founded as an individual enterprise, in 1891, by Frank Scaar, and under his able direction and administration it has been developed to its present representative status, he being president and treasurer of the company that bears his name. The original manufacturing plant was established at No. 184 South Jefferson street, where operations were continued until 1894, when, for the purpose of making adequate provisions for the expanding business, removal was made to larger and more eligible quarters,—the location now utilized by the company. The Scaar architectural iron works now rank among the older and more important institutions of the kind in Chicago, and the history of the same has been marked by continuous growth and by reliable and efficient policies, so that the very reputation of the company today is one of its most valuable commercial assets. Upon removal to the present location requisition was at first made for only one floor, but with the consecutive growth of the enterprise it finally became necessary to utilize the entire building. Under normal conditions the company gives employment to a force of about forty persons in its manufacturing plant and the greater number are skilled mechanics. The trade of the concern extends through various states of the middle west and the business was incorporated in 1906, under the laws of Illinois. The concern has supplied structural and ornamental iron work for many important buildings in Chicago, and among the number may be mentioned those designated at this juncture: Tower building, Methodist Book Concern, Home Trust & Savings Bank, Eastwood Apartment Hotel, municipal comfort station at the Chicago public library building, Colored Young Men's Christian Association, and the following church edifices,—St. Michael's, St. Benedict's, St. Mary of the Lake, and St. Matthias. The company supplied iron work also for St. Francis' Hospital at Blue Island, Illinois; the convent of the Sisters of Christian Charity at Grosse Pointe, Illinois; and the Sacred Heart mission house at Girard, Pennylvania.

FRANK SCAAR

Frank Scaar, founder of the buiness mentioned in the preceding paragraphs, was born and reared in Germany, where he received good educational advantages in his youth and where, at the age of sixteen years, he entered upon a practical apprenticeship as an iron-worker. He became an expert artisan and was em-

ployed in leading establishments in the iron industry in his native land until 1881, when he came to America and established his residence in Chicago. Here he continued to be employed at his trade until 1891, when he engaged in business in an independent way, as noted in the preceding article, which gives adequate data concerning his business career since that time. The company of which he is president has done a specially large amount of work in the supplying of structural and ornamental iron products used in connection with the building of churches, schools and hospitals, and Mr. Scaar is a recognized authority in the field of industrial enterprise in which he has directed his earnest and well ordered activities for many years. He is a liberal and progressive citizen and takes deep interest in all things touching the welfare and advancement of his home city.

E. H. VAVRA & COMPANY

At 2540-48 South Fiftieth avenue, in the Cicero suburban district of Chicago, is established the well equipped manufacturing plant of this corporation, which has developed a specially vigorous and prosperous industrial enterprise in the manufacturing of paraffined folding boxes for the packing of butter, cheese and all kinds of cereals, the growth of the business having been based largely upon a waxing process that was invented by Mr. Vavra, founder and executive head of the company, and upon which he received letters patent in the year 1901. The products issued from the factory of this company are largely used by the more important creamery and packing concerns and the Vavra patented paraffined containers have gained and maintained the highest reputation for superiority.

In 1898 Emerich H. Vavra began in a modest way the manufacturing of wax-enameled butter cartons, and his original factory was a room eighteen by twenty-one feet in dimensions, at the corner of Harrison and Dearborn streets. At the inception of his new enterprise Mr. Vavra did all of the manufacturing work personally and also depended entirely upon his own exploitation for the sale of his products. Close application, excellence of products and general efficiency of service entailed a steady and normal expansion of the business, and the enterprise was continued at the original location, though in enlarged quarters, until 1906, when removal was made to 1002-4 South Canal street, where was effected the lease of one entire floor, fifty by eighty feet in dimensions and where the force of employes was increased to six operatives, one salesman being retained to represent the concern to the trade. Under these conditions the output of the plant was about five hundred thousand cartons monthly. In 1901, as previously noted, Mr. Vavra obtained a patent on his process of waxing boxes and other containers, and the high approval that has attended the sale of the improved containers has caused the business to expand to large volume. As a matter of commercial expediency Mr. Vavra effected in 1913 the incorporation of his business, under the present title, and he has continued as president of the company, which is virtually a close corporation, as indicated by the fact that the other executive officers are as here noted: Frank P. Vavra, vice-president; Alexander H. Vavra, treasurer; and Otto Vavra, secretary. The entire capital stock is owned by members of the Vavra family. The "Enamel Finish Cartons" manufactured by this company

under that title have made for themselves their most effective advertising, for their superiority is recognized by all users. Branch sales offices are maintained in New York city, Cincinnati, Ohio, and Joliet, Illinois, and as appreciable trade has been developed by the company in the Canadian provinces and in Brazil. The manufacturing plant on South Canal street utilized eventually a building of four stories and with an aggregate floor space of eleven thousand square feet. This accommodation finally proved quite inadequate, and in 1917 the company purchased the site of the present modern factory, at 2549-48 South Fiftieth street, Cicero, where was erected a substantial industrial building one hundred and twenty-five by one hundred and twenty-six feet in dimensions, one story and basement. Provision was made also for the furnishing of light and power by the installing of a well ordered private electric plant.

All containers manufactured by E. H. Vavra & Company are fully protected by patents and the company has developed also special patented machinery for the waxing process, as well as special appliances for the printing presses operated in the independent printing department maintained by the company. In the new plant the mechanical equipment has been notably enlarged and the productive capacity fully doubled, so that the company will have the best of facilities for the turning out of fully ten million cartons a month, the corps of operative employes numbering about thirty at the present time. The concern is represented in membership in the National Paper Box Manufacturers' Association.

EMERICH H. VAVRA

Emerich H. Vavra, founder and executive head of the prosperous industrial enterprise described in the foregoing article, was born in Bohemia, on the 25th of March, 1851, and was there reared and educated. He was a lad of sixteen years when he came to the United States, in 1867, and he was for some time employed in a sash and door manufactory in the city of Cleveland, Ohio. In 1871, within a short time after the great fire that brought devastation to Chicago in the autumn of that year, he came to this city, where he readily found profitable employment along the same line of business, owing to the extensive buiding operations that followed the fire and initiated the rehabilitation of the future metropolis of the west. In 1880 Mr. Vavra identified himself with the general merchandise business, and he continued in this line of enterprise until he founded the business now conducted by the company of which he is president. Concerning his career since that time the foregoing article gives adequate data.

FRANK P. VAVRA

Frank P. Vavra, vice-president of E. H. Vavra & Company, was born in Chicago on the 19th of December, 1878, and is the eldest of the three sons associated with their father in the business described in preceding paragraphs. In addition to receiving the advantages of the public schools he took a special

commercial course and incidentally in technical drafting. His first business position was that of bookkeeper and cashier of the Albion Cafe, and thereafter he was engaged in dental laboratory work until 1902, when he allied himself with the business of E. H. Vavra & Company, of which corporation he has been vice-president since 1913. He is affiliated with the Masonic fraternity.

ALEXANDER H. VAVRA

Alexander H. Vavra, treasurer of the company, was born in Chicago on the 16th of October, 1883, and after leaving the public schools he took a special course in electrical laboratory work. Thereafter he was employed two years in the offices of the General Electric Company, and later he was employed at the extensive works of the Western Electric Company. He has been associated with E. H. Vavra & Company since 1902, and was elected its treasurer in 1913. Like both of his brothers, he maintains affiliation with the Masonic fraternity.

OTTO VAVRA

Otto Vavra, who is the youngest of the brothers, was born in Chicago March 14th, 1892, received the advantages of the public schools and also a technical High School education in one of the leading business colleges of the city, identified himself with his father's business in 1910 and has been secretary of the company since January 1st, 1917.

THE STANDARD VARNISH WORKS

This concern is the largest of its kind in the world, was the first to establish definite quality standards in varnish products. The Chicago branch factory is a modern industrial plant, in every respect, thoroughly equipped to meet the requirements of the extensive territory it serves.

The Standard Varnish Works is a New York corporation and the general offices and main factory are established in the Empire state. Besides the headquarters in New York City, offices and distributing branches are maintained in San Francisco, Paris, London, Brussels, Melbourne, and at Toronto, Canada, which is thoroughly established under the corporate title of International Varnish Company, Limited. The present officers of this great industrial corporation are as here noted: Arthur Davis, president; Edward Robson, vice-president; J. William Rosenberg, general manager.

The Standard Varnish Works was established in 1870, and incorporated under the present name in 1887, being the first to introduce varnishes for specific purposes, in sealed packages. From a small factory, the company has grown to be the largest manufacturers of varnishes, enamels, stains, japans, driers, etc.,

in the world, with factories in New York, Chicago and Toronto, and branches in London, San Francisco, Paris, Brussels and Melbourne.

The parent plant, situated on Staten Island, New York, at which are located the extensive research laboratories of the company, consists of forty-five buildings and covers approximately eleven acres, with facilities for the receipt of raw materials and shipment of the finished products by either rail or water transportation. There are miles of underground pipes through which raw materials are pumped into storage tanks on being received. Through others the finished products are driven to storage rooms and there properly aged (an essential feature in the manufacture of high-grade varnishes) before being packed for shipment to all parts of the world. The other plants of the company are equally efficient, being equipped to supply the trade in the districts in which they are located, with the utmost dispatch, and the same conditions are true in connection with the various warehouses and offices of the company.

Of the special products that have given world-wide fame to the Standard Varnish Works, in addition to their extensive list of products supplied to furniture factories, the carriage and auto industries, the following named are among the most important: Elastica No. 1, for all exterior work, where greatest durability is required; Elastica No. 2, for finest interior finish; Elastica Cabinet Finish, for use where a high-grade piano rubbed or polished effect is desired; Elastica Floor Finish, consistently pronounced to be the one perfect floor varnish; White Polishing Varnish for interior work over light-colored woods; Kleartone Flat Varnish, for rubbed effect, without the labor and cost of rubbing; Flattine Cabinet Finish, for flat or mission finish; Stanvar, the wax-like wood finish; Kleartone Oil Stains, labor-saving stains that penetrate as deeply as acid stains; Kleartone Acid Stains, for producing certain stain effects procurable only through an acid stain; Kleartone Paste Wood Fillers, for use on open grain woods; Kleartone Mahogany Coater, for use over Kleartone Mahogany, Walnut, Dark Brown and Cherry Stains, and Satinette Enamel, the immaculate white enamel, made in Gloss White, White Rubbed Effect and Flat White. This enamel will not turn yellow with age and improves on exposure to light and air. The trade of the corporation extends into virtually all parts of the civilized world and, save for the natural effects caused by the industrial irregularities incidental to the great European war, the business has shown a constantly cumulative effect in the foreign as well as the domestic field.

THE ACME PACKING COMPANY

Chicago figures as the world's center of the great packing industry and one of the important concerns contributing to the city's precedence in this field of enterprise is the Acme Packing Company, which dates its inception from April, 1909. The original factory and offices were established at the corner of Twenty-second street and Archer avenue, and the first officers of the new corporation were as here noted: Jens C. Nielson, president; Aagge W. Nielson, vice-president; and Clarence E. Martin, secretary and treasurer. Operations were initiated on a modest scale and with a force of only twenty employes. From the very outset

the executive officers of the company decided to confine the business to the canning of meats, and this policy has been adhered to very closely, no deviation having been indulged in providing for the canning of milk, fruits, vegetables, jellies, etc., which phase of the packing industry is given attention by many other of the leading corporations engaged in the business. While the business of the Acme Packing Company has now grown to enormous volume, it has been built up solely under the provisions of the original policy of canning meats only.

With vigorous business methods and admirable executive policies, the business of the Acme Packing Company prospered from the start, and each succeeding year has recorded a noteworthy expansion of operations. The headquarters originally secured soon proved inadequate, and in 1911 removal was made to the present modern industrial plant,—a three-story and basement building, of brick and steel construction, at 2226-28 South La Salle street. At the end of the very prosperous year's business in 1916 Mr. Martin, secretary and treasurer of the company, purchased the interests of the president and vice-president of the corporation, and assumed full control of the business. From the beginning Mr. Martin showed his discrimination and mature judgment by surrounding himself with a limited corps of genuine workers, and his appreciation of their co-operations was definitely shown when he came into independent control of the enterprise, at the close of the year 1916, for he admitted to partnership two most able coadjutors and perfected the corporate organization by assuming the office of president of the company and by the election of William E. Pemberton to the office of vice-president, with Alfred C. Toldte as secretary and treasurer. The vice-president has charge of the production department of the business and Mr. Toldte is efficiently giving administration to the accounting, credit and general fiscal affairs of the business. The company was originally incorporated with a capital stock of ten thousand dollars, and upon the reorganization under the present control the capital was increased to three hundred and fifty thousand dollars. In the early part of 1917 it was found that the new quarters of the company were too limited to meet the increasing demands, and contracts were let for the construction of an addition to the plant. A new building was completed in the summer of 1917 and adjoins the original building at the north, so that the amplified plant has frontage from 2222 to 2228 on South La Salle street. The aggregate floor space here made available is approximately fifty thousand square feet, and in the extensive plant employment is now given to three hundred and fifty persons.

Progress has been the watchword of this vigorous corporation and to meet imperative demands that even now test the capacity of the manufacturing plant, there have been drawn plans and specifications for the construction of a large and thoroughly modern daylight plant on property owned by the company at the corner of Forty-fifth street and Western avenue. This building, to be completed in the near future, will afford space and productive capacity seven times greater than those of the company's present quarters, and the new building, ground for which was broken in the summer of 1917, will be rushed to completion, the approximate cost for the construction of the same being placed at five hundred thousand dollars. The average annual output from the manufactory of the Acme Packing Company has now attained to an aggregate of fully fifty million packages, and each successive month records a substantial expansion of the business.

E. H. STROUD & COMPANY

Under the above title is conducted one of the important and definitely successful industrial enterprises of Chicago, and the business is now under the sole ownership and control of its founder, Edmund H. Stroud, who has been a resident of Chicago since 1892 and whose technical engineering and mechanical ability, combined with admirable executive and initiative powers, has been effectively brought to bear in the development and upbuilding of the prosperous manufacturing enterprises of which he is the owner. Though the business is under his individual control the title under which it is conducted is such that in this context it is deemed expedient to treat this concern as a firm. E. H. Stroud & Company bases its operations specifically upon the manufacturing of the most improved and effective types of crushing, pulverizing, disintegrating, granulating and shredding machinery, also dust collecting devices, and mechanical stokers. The firm does its manufacturing in five shops within what is known as the "Chicago District." Its general offices are located at 928-930-932-934 Fullerton avenue, in a large modern industrial and office building owned by Mr. Stroud. The engineering and manufacturing business now conducted under the title of E. H. Stroud & Company was founded in April, 1896, by Edmund H. Stroud, and in the following September he admitted to partnership Charles A. Raynolds, the present firm name having been adopted at that time. In 1898 Mr. Stroud purchased the interest of his partner and he has since continued the sole owner of the substantial manufacturing industry that owes its existence to his technical, inventive and administrative ability.

The Stroud Air Separation Pulverizer, made in several sizes, is a machine designed for the reduction of dry grindable materials, and some not bone dry, to uniformly fine powders without the aid of sieving machinery and it is dustless while in operation. It is found at work in many industries, and there are batteries of this machine to be seen in operation in some factories. It is said to be a much more efficient method of making powders than any process requiring the aid of sieves. The Shroud Screen-Separation Crushing, Shredding, Disintegrating and Pulverizing Mill is designed for the effective reduction to meals and coarse powders of all sorts of dry grindable materials as well as for some that contain more or less moisture. This mill is made in several sizes and is provided with rigidly locked adjustable bar screens of varying meshes, to meet specific demands when the product need not be of extreme fineness. Of these valuable devices the following pertinent statements, taken from descriptive literature issued by E. H. Stroud & Company, are apropos:

"Our mills were designed originally to meet the daily needs of large pulverizing works doing business for the general public, and they have been gradually developed to their present high efficiency and mechanical perfection as the result of many years of experience in that school of necessity that makes for invention, and in the meanwhile the machines have been shipped to all parts of the world, for the reduction of animal, chemical, mineral and vegetable substances. We guarantee the perfection of construction of our mills and that they will do what we say in our contracts. Otherwise the mills come back and the buyer's money is refunded."

Another important and remarkably valuable machine manufactured by E.

E. H. STROUD

H. Stroud & Company, in a dozen sizes is the Stroud Powdered Coal Stoker and Burner, for use in locomotives, under stationary builders, and stills, and in furnaces, retorts, kilns, etc.,—in metallurgical cement, chemical and glass works, potteries, etc. Provision is made for the giving of an oxidizing, reducing or neutral flame, as wanted. When the special Powdered Coal Burner for locomotives is used, a covered tender is placed in commission to receive the powdered coal, in place of coal tanks, and a large saving of coal is assured in addition to increased efficiency of the engine. The Stroud Powdered Coal Stokers and Burners draw their own supply of powdered coal from the Storage Bin, or from the tender of a locomotive, also draw their own supply of air from the tender of a locomotive, also draw their own supply of air from the atmosphere, measure the coal and air as used, mix them thoroughly, and deliver the mixture to the furnace, where it ignites at once, producing a clean hot flame, and they enable the operator to have complete control of furnace temperatures. The Stroud Method and Machinery for pulverizing and stoking and burning coal makes no smoke, except perhaps when first starting the fire in a cold furnace, actually saves a large quantity of the coal burned on grates by other methods to produce the same heat, and it competes favorably in results and in cost with Producer Gas, Fuel Oil and Natural Gas. In this connection it is interesting to record that E. H. Stroud & Company by manufacturing the Stroud Air Separation Coal Pulverizer, have made possible the successful use of powdered coal, in which endeavor they are pioneers. Other equally efficient machines are manufactured by the firm, and in the field of technical and practical engineering the concern gives prompt attention to the devising and manufacturing of special machines for which requisition is made on the part of other industrial institutions.

EDMUND H. STROUD

In connection with the foregoing review it is but consonant that there be given a brief outline of the career of Edmund Henry Stroud, the founder of the business and one who has gained secure place as a prominent and influential exponent of the industrial activities of Chicago. Mr. Stroud was born at Birkenhead, Cheshire, England, a son of William Lawrence Stroud and Elizabeth (Chamney) Stroud, who brought him with them to the United States when he was about eight years of age. Mr. Stroud acquired his rudimentary education in his native town and supplemented this by attending the public and private schools of Brooklyn, New York. From early boyhood he showed an aptitude for mechanical accomplishments. As a lad of fifteen years, he became connected with the business of his father, who was then the third largest importer of iron, steel, tin plate and other metals, with headquarters in the city of New York. When he was nineteen years old he was given by his father full power of attorney in connection with the business, and at twenty-two years of age he became one of the partners in the firm of Stroud, Sibbald & Company, of New York City, who thereafter supplied nearly all of the steel rails used in the construction of the Canadian Pacific Railway from ocean to ocean. He continued in partnership with his father until 1890, in which year

he went to Kansas City, Missouri, where he established and assumed supervision of a branch office for the firm of Merchant & Company, of Philadelphia. In 1892 he was assigned to the management of the firm's Chicago branch, and here he continued his alliance with this concern until in 1896 he engaged in business in an independent way by establishing the maufacturing enterprise of which he has since continued the head and of which he has been the sole owner since 1898, as shown in the preceding article.

A zealous churchman, Mr. Stroud is an active communicant of St. Peter's church, Protestant Episcopal, and he is prominently affiliated with the Brotherhood of St. Andrew, a church organization, of the Chicago body of which he was four times elected president in 1908-9-10 and 11. He is an active member of the Central Department of the Young Mens' Christian Association of Chicago and has been zealous in its support. He was for some years chairman of the Committee having full charge of all athletic and aquatic facilities and activities, and a member of the Department Managing Board. He is affiliated with the Masonic Fraternity, having been made a member in Altair Lodge of Free and Accepted Masons, No. 601, in the city of Brooklyn, New York, and his connection remains there. He is also a charter member of the Crescent Athletic Club, of Brooklyn. In Chicago he has identified himself with the Aztec and the Minocqua Tennis Clubs, besides which he was a member of the Apollo Club, one of the leading musical organizations of Chicago, during the period from 1894 to 1899. He was one of the first members of the Chicago Council of the Boy Scouts of America, and has for many years found his greatest pleasure and best means of relaxation in doing what he can as a warm friend of boys.

HENRY LUEDERS & SON

In the distribution of oils, greases and general lubricants this firm ranks among the oldest in Chicago and from a modest inception the business of the concern has been developed to large proportions, this being the result of definite efficiency of service and the application of energy, discrimination and progressive policies on the part of the founder of the enterprise, the offices and distributing plant of the firm being established at the corner of Lincoln and Sunnyside avenues.

The thriving business conducted by this firm was founded by Henry Lueders, who began operations on a small scale, about the time of the close of the World's Columbian Exposition, in 1893, his original quarters having been a small storeroom on Wellington street and at the crossing of the line of the Chicago, Milwaukee & St. Paul Railroad. That Mr. Lueder's financial resources and business facilities were of most modest order is shown in the fact that his original equipment was a small wagon which he used for the selling of oil to customers, a handbell being used to indicate the appearance of the wagon, a custom then in vogue among the oil distributers of Chicago. Mr. Lueders was a veritable pioneer in the field of such direct distribution of oils, greases and lubricants in Chicago, and he reverts in pleasing reminiscence to the experiences and incidents relative to his early activities in the business. Within the first three years he occupied

six different places of business, these changes having been primarily due to the fact that landlords of buildings found that, owing to the high rates of insurance demanded in places where such inflammable products were stored, found it inexpedient to pay the high premiums of insurance and therefore refused longer to rent their properties for such purposes. Mr. Lueders solved this problem by purchasing a tract of land on Oakley avenue, between Cullon and Montrose avenues, and there erecting, in 1896, a storage warehouse that effectually met the demands of his rapidly growing business. At this location the business was continued, with constantly expanding tendencies, until 1910, by which time the volume of operations had become large and important and justified the securing of larger headquarters. It was at this juncture that Mr. Lueders purchased an acre of ground at the corner of Sunnyside and Lincoln avenues, where he erected his present modern storage plant, with the best of facilities for the reception and distribution of the products handled.

For the first three years Mr. Lueders confined his operations principally to the handling of refined oils, but after establishing his own supply station he expanded the scope of his business by adding to his distributing output a full line of oils, greases and lubricants. The normal growth of the business has since involved also the handling of other products, and the large storehouses of the firm now show constantly on hand a full supply of petroleum products for both lubricating and illuminating purposes and general commercial and industrial use, the large reserve stock including gasoline, naptha, turpentine, linseed oil, wood and denatured alcohol, metal and body polishes, cottonseed oil, concentrated ammonia, asphaltums, paint stocks, greases, and oils for chemical and manufacturing purposes. The firm now supplies a large number of the leading manufacturing establishments of Chicago with products in its line and to the representative list of clients new names are constantly being added, the firm's high repute for efficiency of service bringing to it a large amount of unsolicited business. Under the special trademark name of "Sunnyside," the firm carries a complete line of high-grade lubricating oils and greases that put up in cans of various capacities, as well as in barrels. The principal gasoline products handled are manufactured from the basic output of the great oil fields in the state of Oklahoma.

In June, 1917, another tract of land was bought at Lincoln avenue and Troy street. This is on the Northwestern Line and some time in the future it is to be the home of the business. There being plenty of room for great storage of oils. For the first year or so it is to be used only as a gasoline filling station for automobiles, being opened for that purpose during May, 1918.

An important adjunct to the business of this staunch and progressive firm is that involved in the operation of an automobile repair shop, the same being under the general management of Carl G. Lueders, the junior member of the firm, and its operations being largely in the repairing and general overhauling of automobiles, in which department of the enterprise a substantial business has been developed. The firm also figures as local distributer for the Aurora auto-truck unit, which is manufactured in the suburb of Downer's Grove, and the incidental business includes also representation as sales agents for leading manufacturers of automobile tires, besides which a full line of automobile accessories and supplies is handled. The firm maintains a modern garage, consisting of

sixteen private heated garages, the building being forty-two by two hundred and forty feet in dimensions, and the shop has facilities for the vulcanizing of tires, two skilled mechanics being employed and the shop being daily the stage of marked activity in the handling of the large volume of work consigned thereto from the various sections of Chicago and the city's northern suburbs. This branch of the firm's business was established in October, 1916, and has become an important and successful part of the enterprise. Henry Lueders still gives his close personal attention to the busines which he founded and is widely known and respected by oil producers and manufacturers, with secure status as one of the vigorous and representative business men of Chicago. Carl G. Lueders, the junior member of the firm, gives much of his time and attention to the automobile and supply departments of the business.

ZIEMAN ORTHOPEDIC APPLIANCE COMPANY

In its field of manufacturing this concern has exercised most beneficient functions from the time of the inception of the business, nearly a quarter of a century ago, and the company now has prestige as one of the most important of its kind not only in Chicago but also in the entire United States. With a factory that is unexcelled in its mechanical and scientific equipment and accessories, the company has developed representative business in the manufacturing of the best types of orthopedic appliances and through the proper application of the same innumerable physical malformations and disorders have been prevented or cured, this being specially true in connection with the most approved and modern methods of orthopedic surgery. The company manufacture all kinds of appliances for the correction of such physical malformations and special attention is given to the manufacturing of appliances in accordance with requirements of specific prescriptions on the part of physicians and surgeons.

Frederick Zieman, the founder of this representative manufacturing institution, has continued as its executive head from the beginning and is a recognized authority in the producing and applying of orthopedic devices of the fine mechanical type demanded under modern conditions. He had been for seven years associated with the old-time and important Chicago house of Truax & Greene, dealers in supplies for physicians and surgeons, and upon severing his connection with this firm, in 1897, he established the prosperous manufacturing enterprise of which he is now the head. His new business was initiated on a modest scale, with headquarters in a building at the corner of Park avenue and Paulina street, and in a technical way he was admirably fortified, as he had had years of practical experience in the manufacturing of orthopedic appliances. In the original location he continued his business for fourteen years, and in the meanwhile so extensive had the enterprise grown in volume as to necessitate the securing of more ample accommodations. Under these conditions the manufacturing plant was removed to the present quarters, at 1815 West Madison street, where are occupied by the company two floors, each twenty-seven by one hundred and fifteen feet in dimensions. The various types of orthopedic appliances here manufactured have met with wide demand on the part of orthopedic specialists

and representative physicians and surgeons not only in the United States but also in the principal European countries, as well as in South America, Canada, Mexico and the various dependencies of the United States. In manufacturing appliances according to the specifications of special prescriptions the company has gained the unqualified approval and the supporting patronage of many of the world's most distinguished orthopedic specialists and physicians and surgeons, while similar support has come from leading hospitals and surgical institutions in the most diverse sections of the United States. Marked efficiency of service has caused a prodigious growth in the prescription department of the company's business and the same has become one of major importance. The standard appliances here manufactured are sold only by the firm to physicians and individual, and the personnel of the manufacturing staff is composed of men whose expert knowledge has been gained through long experience and who are thus able to turn out work of the utmost mechanical perfection. In the conducting of the business the honored founder has the efficient co-operation of his elder son, Frederic R., who has been identified with the business since 1905 and whose technical and executive powers have been developed through intimate association with all details of the manufacturing and general business administration. William W. Zieman, the younger son, is now one of the principals in the Underwriters' Engineering Company, of Chicago. In 1914 he was graduated in the University of Illinois, with the degree of Bachelor of Science, and he is known as one of the able and representative young chemical engineers of his native city.

By orthopedic authorities the Zieman Orthopedic Manufacturing Company is uniformly regarded as one of the foremost in this field of manufacturing enterprise in the United States, and it is needless to say that it constitutes a significant part of those agencies that go to make up Chicago's splendid industrial crown.

FREDERICK ZIEMAN

Frederick Zieman, the founder of the admirable industry described in the foregoing paragraphs, was born in Kingdom of Saxony, Germany March, 1868. In his native land he received excellent educational advantages, he came to the United States, in 1888. During the greater part of the intervening years he has maintained his home in Chicago, where he established his residence in 1890, and where he has not only achieved success and influence as a prominent manufacturer but has also gained recognition as a broad-minded and public-spirited citizen. He is actively affiliated with various bodies of the time-honored Masonic fraternity and is one of the honored and influential members of the Germania Club.

LOUIS O. OTTERSON

As a designer and builder of special machinery and machinery parts, as a manufacturer of high-grade tools designed for specific purposes and as a specialist

in machineshop equipment and repair work, Mr. Otterson has developed a substantial and important industrial enterprise. He founded his present business in the year 1913 and his original shop, on Washington street, was one of modest order. Substantial expansion of the business later led to his obtaining larger quarters, on Jefferson street, and there he continued operations until 1914, when he removed his plant to the present location, at 108 South Clinton street, where his well equipped factory utilizes twenty-five hundred square feet of floor space. Here are found the most modern mechanical appliances and machinery demanded for the successful prosecution of the business, including lathes, punch-presses, milling, boring and grinding machines, etc. He retains skilled artisans in the factory and has developed a substantial and representative general jobbing business in the machine line, special attention being given to factory equipment and repair work.

Mr. Otterson has wide and varied experience in all departments of machine work and prior to establishing his independent business he had been for five years associated with the Miehle Printing Press & Manufacturing Company, three years with the A. D. White Machinery Company, besides having held a responsible position in the employ of the McDowell Stoker Company. He resigned his position with the A. D. White Machinery Company to establish his present independent industrial enterprise, which under his able direction has been splendidly successful. Mr. Otterson has assisted numerous inventors in the development and perfecting of devices of major importance in mechanical lines, and in a number of instances he took up vague ideas of inventors and materialized the same into concrete development of valuable inventions, all the pertinent experimental and model work being done in his factory. Though he has personally marked inventive genius he has never attempted to develop inventions of his own, as he has deemed it expedient to give his full attention and ability to perfecting work for his customers, this spirit of loyalty being prompted as fully by his high sense of stewardship as by commercial expediency.

Mr. Otterson was born in Norway, on the 22d of August, 1868, and was reared and educated in his native land and was nineteen years of age when he came to America and established his residence in Chicago. Here, through experience gained in various well ordered establishments, he perfected himself as a skilled machinist, and he is well and favorably known as an expert and authority in the field of industrial enterprise in which his energies are directed. Sincere, courteous and upright, he commands the confidence and good will of all who know him, and he numbers among his business clients a large and representative quota of the important manufacturing concerns of Chicago, besides having noteworthy supporting patronage from other sections of the Union.

GEORGE C. PETERSON & COMPANY

In connection with extensive activities involved in the petroleum industry this concern holds a status of importance both in direct production and refining of oil and also in the handling of petroleum products on an extensive scale. The well appointed Chicago offices of the company being established in the Continen-

tal & Commercial National Bank Building, 208 South La Salle street. The corporation of Geo. C. Peterson Co. was organized in 1916, and in November of that year was incorporated under the laws of Delaware, with a capital stock of one hundred thousand dollars. The executive officers of the company are as here noted: George C. Peterson, president; Oscar L. Peterson, vice-president; and William G. Andrews, secretary and treasurer. In August 1917, the capital stock was increased to $200,000 and new election of officers took place. Geo. C. Peterson, President; Franklin Hardinge, vice-president; Oscar F. Schmidt, treasurer; and Oscar C. Peterson, secretary.

The company started its operations in a small office in the Lytton Building. After operating in this office for a few months they were compelled to move to larger quarters in the same building. During the time from February 1st, 1917 to August 1, 1917 the business of the company increased to a point where they are compelled to establish offices in Indianapolis, Indiana and Tulsa Oklahoma. The Indianapolis office being established for the purpose of a sales office and the Tulso office for the purchasing of petroleum products in the mid Continent field. A jobbing business was also opened in the city of Joliet, Illinois, along with one at Chicago. In August, 1917, the general offices of the company were moved to the Continental Commercial National Bank Building, where larger quarters were taken on the 7th floor. During the year of 1917 the company sold 98,000,000 gallons of fuel oil 15,000,000 gallons of gasoline and 10,000,000 gallons of other petroleum products. Their customers included some of the largest manufacturing concerns in the United States, not only did they fill large contracts with gas companies and keep them well supplied but helped the big steel industries help Uncle Sam by always keeping their shipments of oil on schedule so that every one had ample supply of fuel.

The latter part of December the jobbing stations at Joliet and Chicago were discontinued and two refineries were purchased. One being located at Augusta, Kansas and the other at Drumright, Oklahoma. At the time of this writing the company was growing very rapidly and a large list of satisfied customers gives every assurance of a good prosperous and growing future. The directors of the company are: Wm. G. Andrews, Capitalist, Joliet, Illinois; Frank Boydston, Owner of Advertisers Building, Chicago; E. C. Divine, Banker, Chicago; Fred H. Hamlin, Retired Capitalist, Chicago; J. C. Merrill, Retired Capitalist, Chicago; Oscar F. Schmidt, Director South Side States Bank, Chicago; Oscar L. Peterson, Secretary Geo. C. Peterson Co., Chicago; Franklin Hardinge, President Hardinge Bros. Mfg. Co., Chicago; Geo. C. Peterson, President Geo. C. Peterson Company, Chicago.

THE CHICAGO TUBE & IRON COMPANY

In the original charter granted to this Company at the time of its incorporation, under the laws of Illinois, the assigned functions of the new corporation were designated as the selling of boiler tubes and steel plates. At a meeting of the stockholders of the company held August 15th, 1916, a resolution was adopted by a vote of the entire capital stock, changing and enlarging the scope of opera-

tions, and in this revision of the corporate object the province of operations was designated substantially as follows: To buy, sell, deal in and handle boiler tubes; copper ferrules; iron, steel and wood pipe; copper and brass tubing; pipe fittings and valves of every description; tubular goods of every kind, and all other iron and steel products; and to act as agents and distributors of the same. To buy, sell, rent, lease, construct, repair, install, erect an use machinery, tools and mechanical appliances for threading, fitting, changing, adjusting or adapting any of the foregoing products. To buy, rent, lease and hold any and all machine shops and storehouses and all such real and personal property as may be necessary or convenient for the successful prosecution of its business. The Company in its revised charter also made provision for the acquirement of similar business enterprises when expedient and defined adequately its financial prerogatives. The amended charter has enabled the corporation to amplify the scope of its operations and the business has since shown a distinctly cumulative movement, so that the concern is established on a secure basis, with ample capital enlisted and with the most effective executive control.

The incorporators of the Chicago Tube & Iron Company were Emory E. Peter, Chas. A. Bumpus, and E. Morrison Peter. Emory E. Peter has been President of the Company from its inception, and was originally its general manager also. In January, 1916, Edwin E. Hackney, who had been for a number of years connected with the Tyler Tube & Pipe Company, purchased an interest in the business and was chosen Vice President and General Manager, of which dual office he has continued the vigorous and efficient incumbent to the present time. E. Morrison Peter, being Secretary of the Corporation. This Company lays just claim to conducting the largest and most complete exclusive tubular house in America, with the highest standard in service, quality and quantity. The Company is fully equipped to make attractive prices and deliveries for mill shipments, as direct representative of several of the oldest and best established manufacturers, whose products are standard, wherever tubular goods are used. The Company figures as district selling agent for the Tyler Tube & Pipe Company, the South Chester Tube Company, besides being distributors of charcoal-iron locomotive tubes, stay tubes safe ends, and locomotive dry pipe; open-hearth lap-welded steel tubes, the Perfect seamless cold and hot drawn steel tubes; specially made tubes for marine service, and special tubes bent to any desired shape. The lines handled include also many other products of the best type and the concern has the ample storage and supply facilities that make possible a maximum efficiency and a House of Steady Service. The offices and warehouse of the Company are established in the Soo Terminal Building, at Fifteenth and South Jefferson Streets. The splendid growth of the business has been in large measure due to the ability and long practical experience of the President and the Vice President of the Company, each of whom has been identified with similar lines of industrial enterprise for more than fifteen years and each of whom has a wide and favorable acquaintance with the trade.

When this corporation instituted operations it gave employment to about forty men and utilized approximately Fifty-thousand square feet of floor space. During the first year of business the Company handled about five thousand tons of the products. In 1916, the business was doubled, and in the last ten months of that year the business represented the enormous aggregate involved in the

E. E. PETER

E. E. HACKNEY

handling of thirty thousand tons of tube and other steel products, so that the Company well merits its claims to being the largest concern of its kind in America. It is represented in membership in the National Pipe and Supply Association.

EMORY E. PETER

Emory E. Peter, president of the Company, described in the foregoing paragraphs, was born in Washington County, Kentucky, on the 29th of June, 1873, and he is indebted to the schools of his native state for his early educational discipline. In 1899, he initiated his active association with the metal trade, by becoming an interested principal in the Johnson-Peter Company, of Pittsburgh, Pennsylvania, and he resigned the office of President and General Manager of this Company, in June, 1914, (but still holding controlling interest in the Johnson-Peter Company,) when he became one of the organizers and incorporators of the Chicago Tube & Iron Company, of which he has since been the President. Mr. Peter is affiliated with the Masonic fraternity and the Benevolent and Protective Order of Elks, is a member of the Hamilton Club of Chicago, and a member and director of the Olympian Fields Golf Club; also a member of the Illinois Athletic Club of Chicago, and South Shore Country Club and Woodlawn Club.

E. MORRISON PETER

E. Morrison Peter, second Vice President of the Chicago Tube and Iron Company, was born in Washington County, Kentucky, October, 1871, and after leaving school he gave his attention principally to Printing Business, until 1899, when he assumed the position of salesman for the Johnson-Peter Company, of Pittsburgh, Pennsylvania. He made an admirable record in this connection and continued his association with that corporation until 1914, when he became associated with his brother in the incorporation of the Company of which he is now second Vice-President, and to the advancement of which he has contributed largely through his ability and broad practical experience. He is a member of the Olympian Fields Golf Club.

EDWIN E. HACKNEY

Edwin E. Hackney, 1st Vice President and General Manager of the Chicago Tube & Iron Company, has been thus associated with the concern since 1916, as noted in the article descriptive of the Company. He was born at Dresden, Ohio, on the 20th of April, 1870, received his youthful education in the Public Schools and has been concerned with the metal trade since 1902, when he assumed a clerical position in the offices of the Tyler Tube & Pipe Company, of Washington, Pennsylvania. He won promotion to a position of responsibility in connec-

tion with the business of this corporation and continued his alliance until 1916, when he resigned and came to Chicago, for the purpose of identifying himself with the Company of which he is now Vice-President and General Manager. Mr. Hackney is affiliated with the Masonic fraternity, including the Knight Templar, Scottish Rites and Shriners, and also with the Lodge of Elks, and The Bassett Club, Washington, Pa., besides membership in the Olympia Fields Golf Club and Woodlawn Club.

W. W. ORRISON

W. W. Orrison, Secretary and Assistant General Manager of the Chicago Tube and Iron Company, was born at New Brighton, Beaver County, Pennsylvania, on December 22nd, 1867, and obtained his education and school discipline in the schools of Allegheny, Pennsylvania.

He entered the employ of the Pennsylvania Railroad Company in 1880, and filled the offices of various department until 1891, when he became associated with the Oil Well Supply Company, Pittsburgh, Pennsylvania, and remained in their services until 1893, when he accepted a position with the A. M. Byers Company, Pittsburgh, Pennsylvania, who are recognized as being the largest manufacturers of wrought iron pipe in the United States.

Mr. Orrison remained with the above named Company until 1907, at which time he became associated with the Reading Iron Company, who are also recognized as large manufacturers of iron pipe and boiler tubes. Mr. Orrison remained in their services until 1909, when he became associated with the National Tube Company, as Assistant to the Manager of the Chicago Office, which position he retained until 1914, at which time he was induced to sever his connection and cast his lot with the Chicago Tube and Iron Company.

The Senior members of the Chicago Tube and Iron Company consider Mr. Orrison one of the best informed men in America on all subjects relating to the making and sale of all classes of pipe and fittings, as well as other tubular goods.

Mr. Orrison is a member of Illinois Athletic Club, Chicago, and Olympia Fields Country Club.

L. B. ALLEN COMPANY, INC.

An industry does not have to be big to be great. Some of Chicago's minor industries, in point of capital invested, men employed and annual turnover are yet of marked national and international importance.

Such an industry is the manufacture of fluxes for soldering, carried on under the name of L. B. Allen Company, incorporated, with a tidy 50x100 ft. plant at 4517 to 4529 North Lincoln street,—Ravenswood Station, Chicago.

Solder is a humble servant yet the mechanical world would practically fall to pieces without it—and the invention of fluxes has broadened the scope of soldering perhaps ten-fold.

For instance, electrical wiring as it is now carried on—the very nervous system of modern industry—depends on efficient soldering of joints; and the

effectiveness of these joints depends upon the flux used by the man with the soldering iron. Even your automobile and mine would be dead and useless without soldered wire joints.

The late Leonard B. Allen, in the early nineties invented the first non-acid soldering flux, a preparation that at once sprung into prominence at home and abroad because it proved its ability to double or triple the strength of soldered joints, as compared with the time-honored use of muriatic acid. The fact that Mr. Allen's flux was non-acid and therefore non-corrosive, as well as non-poisonous, gained for it a world wide adoption.

So much was this so that imitations sprung up at various points, and the "father" of the industry has now more or less ambitious "children" all over the world.

However, the Allen fluxes still hold the honorable status of being the only ones that enjoy the approval of the National Board of Fire Underwriters.

A stock company, known as L. B. Allen Company, Incorporated, was formed in 1898, with a plant at Rogers Park, then a suburb, but now part of Chicago.

In 1910 the rapidly growing business was moved to its present quarters.

While the stock of the company is held largely by Mrs. Stuart S. Crippen, a sister of the founder, who is the president of the corporation, the active management is vested in Mr. Crippen, who is vice-president and secretary-treasurer of the company.

Under Mr. Crippen's alert management the business has broadened remarkably; and he it was who performed the "impossible" by bringing out a flux that would permit the efficient soldering of aluminum. This invention alone was enough to form the basis of a large business, but, on top of this, Mr. Crippen's genius evolved a gas soldering tool that serves as a blow-torch, a soldering iron and a branding iron—all in one. It is now in extensive use by electricians, painters, plumbers, book-binders and in many other crafts. He also improved, standardized and broadened the general line of fluxes that are sold under the Allen name.

Among other products manufactured by L. B. Allen Co., Inc., are (to use Mr. Crippen's fonetic spelling) Allen's Sodering Stik, Allen's Sodering paste, Allen's sodering Liquid, Allen's Sodering Salts, Allen's Tinning Stik, Allen's Handy Soderset, and a special commutator Lubricant for dynamos generating high potentials.

Mr. Crippen enunciates as a basic principle that, other factors being equal, a soldered joint is exactly as strong as its flux—and no stronger. In this contention the experience of many of America's greatest electrical and other industries that depend upon the Allen fluxes, furnishes daily confirmation.

The officers of the company are C. A. Crippen, president; Stuart S. Crippen, vice president, treasurer and secretary and L. A. Husak, assistant secretary.

THE L. F. PHILLIPS COMPANY

At 218-20 West Kinzie street this young and vital manufacturing company occupies an aggregate floor space of five thousand square feet, has its plant

thoroughly well equipped with the machinery and accessories demanded as productive facilities, and gives employment to a large force of skilled workmen. The concern was organized primarily for the purpose of manufacturing on a large scale the "Phillips Patent Blowout Boot," which in its practical tests has proved to be the most satisfactory of all similar products now on the market,—an accessory of inestimable value to all users of automobiles. The business was established in 1916 and is conducted under the firm name of L. F. Phillips & Company. The company has in its employ six traveling representatives, and these salesmen are exploiting the products of the factory in all parts of the United States, besides which special selling and distributing agents are retained by the company in various important cities of the Union. The authorized representatives of the concern in New York city have supervision of the concern's well established trade in Cuba and the various countries of Central and South America, virtually each successive week recording large shipments of the company's products to meet the constantly increasing demands of this import export trade. In March, 1917, the L. F. Phillips Company made provisions for moving forward its manufacturing activities on a large scale, and each successive month since that time has shown a doubling of the business of the preceding month. The capacity of the well ordered factory is tested to the full and a movement is under way to enlarge the plant's facilities in the near future, commercial expediency fully justifying this action. In this connection the following quotations are consistently reproduced:

"The automobile has certainly furnished a greater field for the inventor and manufacturers of practical articles than any other one industry of the present day. Chicago has a large number of manufacturing concerns closely and prominently allied with the automobile industry, and among them the L. F. Phillips Company is recording a distinctive success in the manufacturing of the Phillips flexible, steel-laced blowout boot for automobile tires. This boot is made of many strands of tough Sea Island cotton tire-fabric, thoroughly vulcanized on a tire core and permanently shaped to the form of a tire. It will not wrinkle or bump and with it any blowout can be expeditiously and effectively repaired,—from the smallest to the largest. This boot completely encircles the inner tube, which it protects thoroughly, and it is as strong at the head as at any other point. It is a sure remedy for tire cuts and will withstand any pressure given. The 'ever-lock' feature is of special design and double-clinched on the sides of the boot, the edges dovetailing and locking with a pin. The boot will not spread and can not bulge through the blowout, so that it meets perfectly every condition of service. It is built for endurance and will invariably outwear the tire. The demand for a simple, wear-proof, trouble-proof boot has existed from the time of the first blowout in the first tire. How completely the Phillips patent boot fills this demand is best demonstrated by the boot itself and by the extensive demand that has been created for it within the short period the device has been on the market."

As is to be inferred, this valuable device was invented and patented by the man whose name gives title to the company and of whom more specific mention is made in appending paragraphs. The original factory, at 3906 Sheridan Road, was occupied until March, 1917, when removal was made to the present larger and well equipped quarters.

L. F. PHILLIPS

L. F. Phillips, proprietor of the company which bears his name and of which mention is made in the preceding context, was born at Rochester, Indiana, in 1887, and he was a child at the time of the family removal to Goshen, that state, where he was reared to adult age and profited fully by the advantages of the public schools. Soon after attaining to his legal majority, and after having previously gained practical experience along this line, he came to Chicago and identified himself with the automobile and tire repair business. His inventive talent found play when he directed his attention to the effecting of improvements in automobile accessories, and after inventing and patenting his now celebrated steel-laced blowout boot he retired from his repair business to engage in the manufacturing of his excellent device. Unequivocal success has attended this venture, as the foregoing article clearly demonstrates, and Mr. Phillips has gained secure vantage-ground as one of the representative inventors and manufacturers of the younger generation in the western metropolis.

BROR A. UTTER

In the year 1907 Mr. Utter established himself independently in business as a manufacturer of small tools, dies, jigs and gauges for all industrial purposes, and from the beginning he has maintained his headquarters at 542 West Jackson boulevard, where he now has a well equipped plant of the best modern facilities and where he gives constant employment to a force of eight skilled mechanics. With maximum efficiency of service and high-grade productions Mr. Utter has developed a substantial and prosperous enterprise, in connection with which he has done a large amount of important work for some of the leading industrial firms and corporations not only of Chicago but also in other cities of the Union. In the upbuilding of his business he has given primary attention to the turning out special hardware work and undertakers' specialties. Prominent on the list of his clients may be mentioned the following named concerns: Merritt Hardware & Manufacturing Company, Crowe Name Plate Company, General Etching Company, Etching Company of America, F. H. Hill & Company, Albaugh-Dover Company, Champion Chemical Works, Brockman Manufacturing Company, and the Chicago Paper Tube & Can Company. In the Utter establishment has been produced a large amount of work for representative industrial concerns in all lines, and the plant has the most modern equipment of machinery, tools and accessories for the handling expeditiously and effectively of general contract manufacturing in all industrial metals.

Broar A. Utter was born at Forfsveg, Sweden, in the year 1870, and he was two years of age when his parents thence removed to Finland, where he was reared to adult age and where he received his early educational discipline, besides their serving a most thorough apprenticeship to the trade of toolmaker. In 1901 he came to the United States and made his way directly to Chicago, where he arrived in June of that year. Here he found employment in a tool shop, and his exceptional skill as an artisan soon gained him definite recognition. For

two years he was employed in the establishment of Winslow Brothers Company and for the ensuing two and one-half years he was similarly engaged with Kling Brothers. He then went to the city of Boston, Massachusetts, where he was employed two years, at the expiration of which he returned to Chicago and effected the organization of the firm of A. O. Matteson & Company, his associates being Anton O. Matteson and Raynold Lundgren. Two years later the partnership alliance was dissolved and in the reorganizing of the business Messrs. Lundgren and Utter assumed control of the enterprise. The factory was then removed from Humboldt Park to an eligible location on Wabansia avenue, and a year later Mr. Lundgren retired from the business, which has been since that time individually and successfully continued by Mr. Utter. Mr. Utter is identified with various fraternal and social organizations, including Republican Lodge, No. 1043, Independent Order of Foresters. He is a reliable and progressive business man and has won advancement through his own ability and well directed activities.

CHARLES E. LARSON

With a thoroughly equipped plant of the best modern facilities, at 111 North Desplaines street, Mr. Larson has developed a substantial and constantly expanding business in the handling of special forge work, steam forging, welding and cutting, case-hardening, and the tempering of all kinds of industrial metals. The forge building occupied is twenty-five by one hundred and fifty feet in dimensions, the equipment including four furnaces of the most improved type and a full complement of forges, traveling cranes, etc. In the handling of this well ordered industrial enterprise Mr. Larson retains in his employ a force of twenty skilled forge men, and the establishment is at all times turning out high-grade work for various industrial concerns, including many of representative order in Chicago and vicinity. Mr. Larson, who has gained high reputation as an expert and authority in the line of industry along which he is directing his activities, has been associated with the same during his entire business career and is now one of its prominent and successful representatives in the western metropolis.

Charles E. Larson was born in Sweden, June 30, 1858, and after having profited by the advantages of the excellent schools of his native land he there served a thorough apprenticeship to the forging and castings trade. He has been a resident of Chicago since 1870 and prior to establishing his independent industrial enterprise he had held responsible positions in various local forge shops of leading order. In this connection he gained such prestige in the local industrial field that when he engaged in business for himself he found this a most valuable commercial asset. He has extended the scope of his business until it now constitutes one of the important units in the forging industry in Chicago.

In the prosecution of his business Mr. Larson has the effective co-operation of his three sons, Edward L., Arvid A. and Martin E., all of whom have distinctive technical skill, besides being known as vigorous and progressive young business men. Father and sons are associated in the ownership of another prosperous industrial enterprise, which is conducted under the title of the Advance Welding

Machine Company, the well equipped plant of this concern being established at 525 West Jackson boulevard, with the main office at 111 North Desplaines street, where it occupies nearly two thousand square feet of floor space and controls a substantial business in the welding of all kinds of metal by the oxy-acetylene process, a specialty being made of the handling of cast-iron and aluminum work. The business is of large volume and is constantly expanding, due to the efficiency of service and the high-grade work turned out. The establishment does a large amount of welding of defective castings and automobile parts, and this enterprise is under the direct management of Arvid A. Larson, who is a skilled automobile engineer of wide experience.

Edward L. Larson, business manager of the two industrial enterprises in which he is associated with his father and brothers, was born and reared in Chicago, and after having duly availed himself of the advantages of the public schools he entered the Lewis Institute, in which he continued his studies a matter of four years in night class in steam and electrical engineering and draughting until he had completed the full course in this admirable Chicago institution and later he was graduated also in the Northwestern Business College and International Correspondence school in steam engineering.

Arvid A. Larson likewise was born, reared and educated in Chicago, where he took a course in a business college after leaving the public schools, and he has made a most careful and extended study of automobile engineering, in which he is now an acknowledged expert.

Martin E. Larson, youngest of the three sons, likewise is making admirable record as one of the aggressive young business men of his native city, and he has been actively identified with his father's business activities since he finished his school work, which included a course in a local business college.

THE MARINE IRON WORKS

Since the dawn of its history as a civilized community Chicago has found appreciation of its splendid water-transportation advantages, and in connection with the development of marine commerce on the Great Lakes there has been offered a great opportunity for the establishing in Chicago of important industrial enterprise for direct relevance to the lake-marine service. One of the foremost productive enterprises of this order is that of the extensive and well ordered Marine Iron Works, designers and builders of marine engines, boilers and machinery, ranging from ten to two thousand horse power, and attention is given also, under the most favorable of conditions and auspices, to other special marine work. The offices and manufacturing plant of this representative Chicago institution are situated at 2036-44 Dominick street. Here are produced the largest and finest types of triple-expansion marine engines, the output including various sizes and types and representing the maximum of excellence. The heavy-service and Triple Expansion fore and aft compound marine engines manufactured by the company are built for hard service and high steam pressure, and all, from the smallest to the largest, are of the substantial open-front "bar" guide design. The output includes also vertical tendem compound marine engines for small

and medium steam craft, and these are specially applicable to hard-working boats operating on salt water or wherever economy of space is of paramount importance. In short, the company manufactures the ultimate types of engines for use in navigation on both fresh and salt water, and the business has developed to large volume in connection with vessels plying salt water as well as the Great Lakes and other mediums of inland navigation. Stern paddle-wheel engines are manufactured in both high-pressure and compound condensing types; the line of boilers includes the Clyde, the Scotch, the locomotive-firebox, the Westriver, the submerged-tube verticle and other marine types, and the concern also produces a great variety of special marine machinery and appurtenances, including condensing apparatus, machinery for South American countries, steel-frame boat hulls, propeller wheels, cargo hoists, steam capstans, tow-posts, test and centrifugal pumps, throttle valves, steering wheels, etc. Ample details concerning the multifarious output are given in the catalogues and bulletins issued by the company and such data demand no reproduction in a publication of the province of the one here offered.

The Marine Iron Works of Chicago constitute an industrial institution that was founded in the year 1895, when the title appeared on the corporate charter obtained under the laws of Illinois, the original capital stock of twenty-five thousand dollars having since been increased to seventy-five thousand. At the time of incorporation the following executive officers were chosen: Adlai T. Ewing, president; William G. Nourse, secretary and General Manager and James T. Hall, treasurer. The original functions of the company were designated as the manufacturing of small marine engines and small steamboats. The new company purchased the plant, stock and business of C. P. Willard & Company, at 2036-44 Dominick street, the buildings of this plant affording about fifty thousand square feet of floor space. In September, 1901 the institution was destroyed by fire, with a loss of fifty-five thousand dollars. In the following year the company completed and took possession of two modern industrial buildings of mill construction the same having twenty-six thousand square feet of floor space and the best of mechanical equipment being installed throughout, the new plant having facilities for the manufacturing of marine engines varying from twenty-five to fifteen hundred horse power and weighing as high as seventy thousand pounds. The concern now manufactures on a large scale marine engines more specially adapted to deep-sea navigation, and much of the output is used in vessels engaged in ocean traffic. The engines manufactured by this Chicago corporation represent the maximum of simplicity in construction, and efficiency and economy of operation, the splendid service given through their installation constituting the most effective advertising for the manufacturers. The company has its plant specially well equipped for the construction of knockdown steel bottoms for light-draft vessels, including tugs, and the concern has gained prestige for the production of stern-wheel vessels of the lightest draft known in marine trade. Boats, engines and boilers manufactured by the company are now to be found in commission in virtually every important country in the world, and the average annual business is about two hundred and fifty thousand dollars, while the output capacity of the plant makes provision for an appreciable increase of the business. An ample force of skilled workmen and assistant mechanics is employed and so great are

W. H. BATES

W. S. BARNES

MARINE IRON WORKS

the demands placed upon the factory that provisions are being made for the addition of twenty thousand additional floor space within the year 1918.

The present executive officers of the Marine Iron Works of Chicago are as here noted: C. Furness Hately, president; William H. Bates, vice-president and general manager; W. Stimson Barnes, secretary; and John G. Kreer, treasurer. Of the founders of the business only two are now living,—Adlai T. Ewing and David H. Burrell. Mr. Hately, president of the company is also prominently identified with the lumber and cotton industry and is president of the National Service Guard Company. John G. Kreer, treasurer of the company, has attained to high reputation as a naval architect and marine engineering expert, and is president of the Hoyt-Moe Steel Company. William H. Bates, vice-president and general manager of the Marine Iron Works, was born and reared in Scotland, where he served a thorough apprenticeship in marine engineering. Thereafter he was employed for several years as engineer on large trans-Atlantic liners, and in 1879 he came to the United States and established his residence in Chicago and became associated with the C. P. Willard & Co. and in 1895, he became one of the principals in the organization and incorporation of the Marine Iron Works, with which he has since been connected in important executive and technical capacity. He is affiliated with the Masonic fraternity and holds membership in the Mystic Athletic Club. W. Stimson Barnes, secretary of the company, was born in the state of New York and after having completed the curriculum of the public schools he took a higher academic course of study in the New York State Normal School at Potsdam. He has been associated with mechanical industrial enterprise for more than a quarter of a century, has been a resident of Chicago since 1891 and became associated with the Marine Iron Works at the time of its organization and incorporation. He has received the thirty-second degree of the Ancient Accepted Scottish Rite of Masonry, besides being affiliated with the Ancient Arabic Order of the Nobles of the Mystic Shrine, and he is an active and popular member of the Mystic Athletic Club.

BLOMFELDT & RAPP COMPANY

The modern and well equipped industrial plant of this corporation is established at 108-128 North Jefferson street, and the company has developed a large and important industrial enterprise in the manufacturing of special machinery, dies, jigs, models, tools, etc., besides which special attention is given to job work and repairing. The business was founded in 1896, by Axel P. Blomfeldt and Oscar Rapp, who instituted business under the firm name of Blomfeldt & Rapp, the original factory having been established in modest quarters in the building at 32 Market street, corner of Randolph street, where at the beginning was utilized a floor space of only twelve hundred and fifty square feet and the number of mechanics employed was only four. These quarters, in the Diston building, were occupied by the firm for two years,—until the plant was destroyed by fire. The firm promptly resumed operations by obtaining quarters in the Russell building, at the corner of Canal and Randolph streets, where requisition was made for twenty-five hundred square feet of floor space and where operations

were continued on a constantly expanding scale until 1907, when possession was taken of the present quarters, the factory now utilizing ten thousand square feet of floor space.

Under the original firm title the business was continued until 1911, when, as a matter of commercial expediency incidental to the substantial growth of the business, the present corporation was formed, the charter of the Blomfeldt & Rapp Company having been granted under the provision of the laws of Illinois, with a designated capital stock of twenty thousand dollars. The company's factory is well equipped in every department, having the best of mechanical facilities and accessories, and here constant employment is now given to an average corps of fifteen skilled mechanics. Oscar Rapp has been president of the company from the time of its incorporation and his valued coadjutor, Axel P. Blomfeldt, has been its secretary and treasurer, while the latter's son, Allen A., is vice-president of the corporation. The business of the concern is conducted under an organization marked by the best type of efficiency along both productive and commercial lines, and progressive policies have been brought to bear in the prosecution of the enterprise from the time of its inception. The firm and the present corporation have handled a large amount of important work for representative manufacturing and commercial concerns of Chicago, and the establishment is one of the best of its kind in the metropolitan manufacturing district of Chicago. It is unnecessary in this circumscribed review to enter into details concerning the various products turned out by this company, as pamphlets, catalogues, etc., are issued to cover these points, but it is but consistent to note that the company controls the patents and a number of high-grade machines manufactured in the establishment, including a paper-shredding machine, for destroying railroad, transfer and other tickets, premium stamps, wrappers, checks, confidential papers, manuscripts, stationery, etc.; local ticket-printing machinery; numbering wheels for card local presses; duplex card-ticket counting machines; rotary card-ticket cutting machines; automatic card cutter and card-ticket tying machines; ticket destroyers and paper-macerating machines and other special machinery of the best grade. These various machines are sold not only in all parts of the United States but an export trade of substantial order also has been developed. The company is represented in membership in the Illinois Manufacturers' Association and the National Metal Trades Association. In appending paragraphs will be found specific mention of the officers of this vigorous industrial corporation.

AXEL P. BLOMFELDT

In a preceding article has been shown the important part that has been played by Mr. Blomfeldt in the upbuilding of the prosperous industrial enterprise conducted by the Blomfeldt & Rapp Company, of which he is secretary and treasurer. He was born in the town of Köping, Sweden, April 10th, 1858, a son of Peter Eric and Anna (Bernwall) Blomfeldt. In the schools of his native land he acquired his youthful education and in his home city of Köping he served a thorough apprenticeship in the shops of the Köping Mechanical Works, one of the largest industrial institutions of Sweden. As a skilled artisan he was employed

in this and other connections in Sweden until 1880, when he severed the home ties and emigrated to the United States, where he felt assured of better opportunities for the achieving of independence through individual effort. Immediately after landing in America he made his way to Chicago, in 1881, and here he found full demand for his efficient service in connection with the work of his trade. He continued to be employed in connection with the metal trades industries of Chicago until he initiated independent enterprise in the same line, in 1896, when he formed a partnership with Oscar Rapp and founded the now substantial business conducted by the Blomfeldt & Rapp Company, as noted in the article descriptive of this progressive corporation.

In politics Mr. Blomfeldt is arrayed staunchly as a supporter of the cause of the republican party; he is affiliated with the Independent Order of Svithiod, and also is actively identified with King Oscar Lodge, No. 855, Ancient Free & Accepted Masons.

ALLEN A. BLOMFELDT

Allen A. Blomfeldt, vice-president of the Blomfeldt & Rapp Company, was born in Chicago on the 5th of January, 1887, and is indebted to the public schools for his early educational discipline, which was supplemented by an effective course in the Crane Manual Training School, and by a general mechanical course, including technical and practical ventilating and heating, in the University of Illinois, and graduated in class 1911. He has been associated actively with the business founded by his father and Mr. Rapp since he left school and has been vice-president of the company since 1915. He holds membership in the University Club, the American Society of Heating & Ventilating Engineers, and the Swedish Engineering Society, the while he is numbered among the alert and progressive young business men of his native city.

OSCAR RAPP

Oscar Rapp, president of the company of which mention is made in foregoing paragraphs, was born at Odeshog, Sweden, on the 15th of October, 1863, and is a son of Hjalmar Rapp, who had been actively engaged in farm enterprise in his native land until 1879, when he came with his family to the United States, the closing years of his life having been passed in Chicago. Oscar Rapp gained his early education in the excellent schools of his native land and was a youth of about sixteen years when he came with his parents to Chicago, where he continued his studies in the public schools until he was fourteen years old. He then entered the employ of the Vaughn & Bushnell Manufacturing Company, and in this connection, as well as through later association with other representative manufacturing concerns of Chicago, he became skilled in mechanical lines, so that, after a period of twelve years in the service of others, he was well fortified when he associated himself with Axel P. Blomfeldt in founding an independent industrial enterprise, as described in the foregoing review of the

Blomfeldt & Rapp Company, of which he has been president from the time of incorporation.

Mr. Rapp has won secure place as one of the substantial business men of Chicago, is an active member of the Swedish Engineering Association and King Oscar Lodge, No. 855, Ancient Free & Accepted Masons, with which he has been affiliated for more than a decade.

THE NELSON TOOL COMPANY

This corporation has its well equipped manufacturing plant established at the corner of Ashland avenue and West Lake street, with office address at 1605 on the latter thoroughfare. The company has representative status in the manufacturing of special tools, dies, jigs and other industrial accessories of the highest grade, and the concern has special prominence in the manufacturing of the standard equipment known as the Nelson Universal Machine Tool Attachment, the same being applicable for boring, grinding and planing operations. This valuable mechanism was invented by George A. Nelson, who is president and general manager of the company and who has devoted virtually his entire active career to the devising and improving of industrial tools.

In the year 1906 Mr. Nelson organized the Grant-Nelson Tool Company, in association with his brother-in-law, Fred Grant, and they established their modest factory at 695 West Lake street. The first specific product here manufactured was the Nelson Special Boring Bars, and for the past decade these bars have been a part of the standard equipment in practically all of the leading machine shops and factories of Chicago, while they are used also in factories throughout all sections of the United States, as well as in many foreign countries. Mr. Nelson finally sold his interest in the business of this company, the manufacturing plant of which was then removed to Wisconsin, and he then connected himself with the Excelsior Motorcycle Company, of Chicago, in the capacity of specialist and expert. Later he was associated with the General Motor Company, of Pontiac, Michigan, but in 1915 he severed this alliance to engage in experimental work in perfecting and patenting the Nelson Universal Machine Tool Attachment, which represents the maximum of rigidity and utility. The adjustable holder, in the form of a semi-circular bracket and sleeve, is accurately fitted and the device is the simplest and most efficient of all appliances of the kind on the market. The attachment, notable for its remarkable rigidity, is easily and quickly adjusted to the machine by slipping it over a tool-post with a large circular base, the slight overhang making the adjustment most easy, as the sleeve is reversible, as well as adjustable to any height and the various attachments are combined into a single unit for either boring or grinding. As a grinder the device has a number of valuable features not found in any other mechanism of the sort,—First, extreme rigidity; Second, self-balance; Third, limited overhang; Fourth, it is belt-driven direct from motor and the motor is adjustable; Five, It has grinder spindle for both external and internal grinding, with self-oiling bronze bushings; Six, absolute freedom from vibration; Seven, any motor or current may be used. The attachment may be run at any speed

up to thirty thousand revolutions a minute, thus adapting itself to the various sizes of wheels used, and speed can be instantly controlled,—a feature that can be claimed for no other grinder. Another strong point of superiority over all other types of grinders, which are often rendered useless by demand for motor repairs, is that the Nelson attachment is adjustable to any motor and in case of irregularity of the latter all that is required is a change of motor. The Nelson attachments are considered the best on the market and among the representative Chicago concerns making use of this and other Nelson products may be mentioned the following: Link Belt Company, Chicago Hoisting Machine Company, Henry Lang & Company, C. H. Besley & Company, Fort Dearborn Manufacturing Company, Foote Brothers Gear & Machine Company, William Haberkamp Company, H. Marchant & Company, B. F. Gump Company, Reedy Elevator Company, McDonald Gas Engine Company, Olson-Tillgner Company, F. P. Smith Wire & Iron Company, L. Wolff Manufacturing Company, Nye Steam Pump Company, McDonald Can Machine Company, Marine Iron Works, Dart Manufacturing Company. Of important industrial concerns outside of Chicago that use the Nelson attachments and tools may be noted: Wisconsin Paper Company of Grand Rapids, Wisconsin; American Machine Company, Arthur Colton & Company, and Murchey Tool Company, all of Detroit, Michigan; Fleetwood Engineering Company, Fleetwood, Michigan; General Motors Company, Hess Spring & Axle Company, Pontiac, Michigan; Windsor Tool & Machine Company, Windsor, Canada; Packard Machine Company, Milwaukee, Wisconsin; Buck & Hickman, London, England; City Machine & Tool Company, Dayton Stamping & Tool Company, North Dayton Tool Works, National Vacuum Machinery Company, James Saunders Company, Patterson Tool & Supply Company, all of Dayton, Ohio; Kelly Machine Company, Troy, Ohio; besides many others in industrial centers in the most diverse parts of the United States.

The Nelson Tool Company was organized in the year 1917, and its official corps is as here noted: George A. Nelson, president and general manager.

GEORGE A. NELSON

George A. Nelson, president of the company mentioned in the foregoing context, was born at Faaborg, Denmark, on the 29th of September, 1864, and is indebted to the excellent schools of his native land for his early educational discipline. There also the learned the trade of machinist, and he has long been recognized as an expert mechanic and as a man of marked inventive talent, a number of specially practical and valuable mechanical devices having been invented and patented by him. He has been actively concerned with special machine work during the entire period of his residence in the United States, and he first came to Chicago in 1883. For a number of years he held a responsible position as special machinist with the Link Belt Company of this city, and he is known as an expert and authority on all questions and problems, as well as technical points, pertaining to grinding, boring and polishing machines. A man of sincerity and ability, he has become successful in connection with industrial enterprise in Chicago and it may consistently be said that his circle of friends is coincident with that of his acquaintances.

P. FOGELBERG & SONS

At 126 South Clinton street is established the well equipped plant of this representative firm, which is one of the oldest and most important concerns of the kind in Chicago and which has proved a valuable medium for the furtherance of many leading manufacturing enterprises in the western metropolis, the functions of the firm being in the manufacturing of models and metal patterns and in the effective handling of experimental work and general jobbing business in its field of enterprise. The Fogelberg establishment has given co-operation in the development of patterns and models upon which have been based the operations of some of the most important manufacturing industries of Chicago, many such concerns still relying upon this firm for high-grade pattern and model work, as well as that of experimental and development order.

The business of P. Fogelberg & Sons was founded in 1898, by Peter Fogelberg, who continued as its executive head to the present time, with the co-operation of William Boettcher, and the original shop was established at 113 South Jefferson street, whence removal later was made to larger quarters at 113 South Jefferson street. Mr. Fogelberg continued his active alliance with Mr. Boettcher for fifteen years and then, in 1914, sold his interest in the business to his partner, in order to establish an independent business of the same order. Thus the present firm of P. Fogelberg & Sons was founded in 1914, and the headquarters have from the beginning been maintained at the present location, where are utilized three thousand square feet of floor space and where the mechanical equipment and general accessories are of the best modern type throughout the establishment. The facilities provide for the effective handling of all kinds of metal patterns and models for industrial purposes, and the business of the firm has grown to large volume, largely through the influence of the high reputation maintained by its founder along both technical lines and as an upright and reliable business man. Within thirty years of consecutive identification with this important line of enterprise Peter Fogelberg has had charge of a large amount of specially important work in his technical sphere of service, and the record thus made is now interesting in not only a scientific and industrial sense but also from an historic standpoint. He and his two sons, constituting the progressive firm, have constant supervision of all details of work in their establishment, and retain in their employ an average corps of ten skilled mechanics. Insistent is the firm's policy of turning out none but the highest grade of work in all departments of its establishment, and its reputation is an undeniable and valuable commercial asset.

PETER FOGELBERG

Peter Fogelberg, founder and executive head of the firm described in the foregoing context, was born at Kristanstad, Sweden, July 3, 1859, and he was a child at the time of the death of his father, who was an expert carpenter and successful contractor in that city. Mr. Fogelberg was afforded in his youth excellent educational advantages and there gained thorough and varied experience in the metal-working trade, in which he became a skilled artisan. In

Sweden he held responsible positions in a number of metal-working establishments, and finally, in 1887, he became a resident of Chicago, where he was employed in an iron foundry for a period of about six months. He was then able to realize his ambition in obtaining employment in a shop devoted to the manufacturing of metal patterns and models, and with this special phase of industrial enterprise he has been actively concerned for thirty years, during nearly twenty of which he has conducted an independent business.

For a score of years Mr. Fogelberg has been one of the honored and influential members of Humboldt Tent, No. 26, Knights of the Maccabees. For nearly a decade he has been actively identified with the Viking Society of Chicago, and for fully fifteen years he has been a leading member of the local organization of the Independent Order of Svithiod, of which he has served as president, besides which he has been called upon to serve as secretary, treasurer and a trustee of the Vassa Society of Chicago. Through these pleasing alliances he vitalizes the gracious memories of his native land and also his interest in the beautiful traditions and sturdy history of the fair Norseland, the while he stands forth as a most loyal and progressive citizen of the United States.

ADVANCE PATTERN WORKS

Incidental to the prosecution of manifold lines of productive industrial enterprises there is imperative demand for the interposition of the skilled and reliable pattern maker and model maker, and thus in a great manufacturing center like Chicago is offered the best of opportunities for the development of such adjunct and important enterprises as that conducted under the title noted above, this well ordered concern being direct successor to the firm of Champlin & Schoen and its consistent watchwords being "Accuracy and Service." The well equipped establishment of the Advance Pattern Works is located in the building at 558-60 Washington boulevard, and the business was founded fully fifteen years ago. The concern has under former and present management, contributed materially to the advancement of industrial enterprise in Chicago and its primary functions are the manufacture of wood and metal patterns, match plates and molding machine equipment. As specialists in this line of production the Advance Pattern Works have done important work for some of the largest manufacturing institutions in the country and have gained a reputation that in itself is the best of commercial assets, and on account of the increased business are now contemplating the addition of a brass and aluminum foundry specializing in match plates, pattern castings and other high-grade brass and aluminum castings.

The business of the Advance Pattern Works was founded in 1902, by Dewitt Clinton Champlin, who began operation on a modest scale and at the location of the present works. Nels Schoen, a skilled artisan early became associated with the enterprise, and in 1909 he was admitted to partnership, where upon the firm name of Champlin-Schoen was adopted. Under this title the business was successfully continued until May 15, 1917, when on account of the constant expansion of business and as a matter of commercial expediency, a re-organization

was effected under the present title, this readjustment making Mr. Schoen and E. G. Grundstrom copartners in control of the business. On the list of patrons of this concern are to be found the names of many representative manufacturing industries of Chicago and other cities, and in connection with the nation's vigorous preparation for participation in the great European War the Advance Pattern Works is turning out a large amount of work for the United States government. Prominent among the important Chicago manufacturing concerns that rely upon the Advance Pattern Works for the producing of their patterns may be noted the following: The McCord Company, the Universal Stamping and Manufacturing Company, the Dusenberg Motors Corporation, Bendix & Gernandt, Miller & Pardee Company, Western Foundry Company and the Chicago Hardware Foundry Company, the Chicago Faucet Company, Bertman Electric Company, American Ironing Machine Company, International Harvester Corporation, Consolidated Engineering Company, Goodman Manufacturing Company.

In the shops of the Advance Pattern Works employment is given to an average force of fifteen skilled artisans, and no product is permitted to go forth if it falls in the least particular below the high standard set by the concern. On the first floor of the building occupied by the firm it uses a floor space forty by sixty feet in dimensions, and on the second floor requisition is made for eight hundred square feet. The mechanical and accessory equipment of the plant is of the most modern and approved order and the firm is prepared to handle with consummate accuracy and due expedition all kinds of wood and metal pattern works the best of material and workmanship being assured in every instance. The firm is represented in membership in the Patternmakers Employers' Association of Chicago.

NELS SCHOEN

Nels Schoen, the senior member of the firm conducting business under the title of the Advance Pattern Works, was born in Sweden, on the 14th of September, 1882, and received in his youth a good educational advantage, besides which he learned under most favorable auspices all details of expert patternmaking. He has been a resident of Chicago since 1901 and has here acquired through his own ability and well directed efforts a secure status as one of the successful and progressive business men of the western metropolis, his well ordered administrative policies having contributed materially to the upbuilding of the substantial business with which he has been identified during the greater part of the time since he came to Chicago.

E. G. GRUNDSTROM

E. G. Grundstrom, junior member of the firm, of which description has been given in a preceding article, was born in Gefle, Sweden, on the 26th of November, 1884, and in the school of his native town he acquired his rudimentary education, which was supplemented by attendance in the public schools of Chicago,

the family home having been established in this city when he was about sixteen years of age. His entire active career has been marked by consecutive association with the patternmaking industry, and he is known as an expert artisan in the field of enterprise. For a time he was in the employ of the Chicago Ornamental Iron Works, later he was similarly associated with the Chicago Malleable Castings Company, and thereafter he was for nine years in charge of the moulding machine department of the Western Foundry Company—a position which he resigned when he became one of the principals in the conducting of the business of the Advance Pattern Works, in May, 1917, as noted in the foregoing review of the enterprise. Mr. Grundstrom is recognized as an authority in connection with molding machinery and all branches of foundry work, and his reputation in these lines have brought to the Advance Pattern Works so large a volume of business that the moulding machine and foundry equipment departments now constitute very important parts of the substantial business. Mr. Grundstrom has gained the staunchest of friends in business and social circles and is consistently designated as one of the representative business men of the younger generation in Chicago.

THE BOYE NEEDLE COMPANY

At 4339-4343 Ravenswood avenue is established the well ordered factory of this company, which has developed a substantial industry in the sale of needles, also manufacturing of sewing machine supplies, hardware and dry goods novelties. The business was founded in 1905 and was incorporated with a capital stock of thirty thousand dollars. The personnel of the corps of officers is as follows: John L. Flannery, president; John L. Flannery, Jr., vice-president; Edward P. Byrnes, secretary; and George W. Burke, treasurer. The new corporation engaged in the manufacturing of sewing machine supplies, including a number of special accessories that had been invented by the company. With the growing success of the enterprise its scope of operations was expanded, to include the manufacture of a line of novelties handled in hardware establishments, dry goods and department stores. The output of the now large and modern factory includes hand and sewing machine needles of the highest grade, crochet hooks, crochet and yarn-ball holders, tatting shuttles, safety pins, hair pins, hair curlers, hat pins, ribbon leaders, beauty pins, both gold and silver-plated; skirt and belt pins, emergency buttons, stilettos, needle sharpeners, sewing machine shuttles, belts and other accessories, such as keys, oil cans, rubbers for bobbin winders, screw drivers and needle threaders. Among the important specialties manufactured may be mentioned crochet hooks, knitting needles, tatting shuttles, can openers, apple corers, curtain rods, armlets, jar wrenches, key hooks, locks, magic mirrors, nutmeg graters, pencil clips, nut crackers, etc. Among the novelties manufactured by the company special attention may be directed to the improved patented apple corer which is the only device of the kind that in operation leaves in each apple a cup for the retention of sugar; a can opener that likewise is patented and that is so constructed as to obviate entirely all danger of injury to the hand of the operator; a jar wrench that is applicable to all sizes of fruit and

general preserving jars; and other devices whose superiority creates a ready and cumulative demand for the same.

The original factory of The Boye Needle Company was established in a building on Wabash avenue, between Randolph and Washington streets, and here was utilized a floor space of five hundred square feet, the force of employes averaging about thirty. In 1908 this building was destroyed by fire, entailing an appreciable loss to the company, but in the meanwhile the corporation had instituted the erection of its own factory building, at 4339-43 Ravenswood avenue, and in this modern industrial building manufacturing operations were resumed on a much larger scale and with greater facilities. The building is a three-story structure of reinforced concrete, gives an aggregate floor space of nearly thirty thousand square feet, and the force of employes in the establishment now aggregates one hundred and fifty persons. A corps of thirty traveling salesmen represents the company to the trade, and the business of the concern extends into all parts of the United States, a branch office and wareroom being established at 112 East Nineteenth street, New York city, and another at 149 New Montgomery street, San Francisco. The sales of the company for the first year of its operations aggregated approximately twenty-five thousand dollars, and the splendid growth that has attended the enterprise in the intervening period is significantly shown in the statement that the business of the company for its fiscal year 1916 aggregated more than three hundred and thirty thousand dollars. It is due to the able and progressive commercial policies of John L. Flannery, president and owner of the controlling interest in the business, that such noteworthy success has been attained.

JOHN L. FLANNERY

John L. Flannery was born at Middletown, Orange county, New York, on the 20th of April, 1847, a son of John L. and Mary (Corwin) Flannery, his father having been a valiant soldier of the Union in the Civil war and having died while incarcerated in a Confederate prison, some time prior to the close of the great conflict between the North and the South. After his death his widow removed with her six children to New London, Ohio, and there the subject of this review attended the public schools until he was fourteen years of age, when it became incumbent upon him to secure employment and aid in the support of his widowed mother and the other children, he having been the second child. Under these conditions he began service as an errand boy in a grocery store in the city of Cleveland, Ohio, and his energy, fidelity and receptiveness received recognition four months later, when he was promoted to the dignified position of clerk or salesman in the establishment.

In 1869, when twenty-two years of age, Mr. Flannery came to Chicago and secured a position as salesman for the Wheeler & Wilson Sewing Machine Company. Characteristic ambition and determined effort here brought him consecutive advancement until he was finally made general western manager for the company, with which he continued his alliance for thirty-six years. His official position involved his supervision of many important branches, these having been established in more than twenty-five of the larger cities of the middle and western

JOHN L. FLANNERY

states, and thus he was the directing head of the service of hundreds of the company's employes and representatives. In his position as western manager, Mr. Flannery had occasion to make regular visitations to the various branch houses, and thus he gained familiarity and broad acquaintanceship throughout the northwest, the southwest and the extreme western states, all of these sections having been within his official jurisdiction. Upon his severing his long and effective association with the Wheeler & Wilson company Mr. Flannery became one of the organizers and incorporators of The Boye Needle Company, of which he has been the president. He is a member of the Chicago Association of Commerce, is affiliated with the Masonic fraternity and holds membership in the Chicago Athletic Association and the Edgewater Golf Club, his chief recreation being gained through his effective activities as a golfsman.

On the 18th of February, 1874, was solemnized the marriage of Mr. Flannery to Miss Mary Barker, daughter of the late George Barker, an early settler and influential citizen of Chicago. Of the two children of this union the elder is John L., Jr., who is a graduate of Cornell University, has been actively identified with The Boye Needle Company since 1912, was formerly manager of the company's branch establishment in New York city, and is now vice-president of the company. Florence, the younger of the two children, is the wife of Howard A. Woolverton, of South Bend, Indiana.

CHICAGO WIRE, IRON & BRASS WORKS

At the corner of Western avenue and Nelson street is established the modern and specially well equipped manufacturing plant of this representative industrial corporation, and the eligibility of the site is further accentuated by reason of the fact that the factory is situated on the north branch of the Chicago river. The business was founded in 1912 and was incorporated under the provisions of the laws of Illinois, with a capital stock of ten thousand dollars, the personnel of the original executive corps having been as here noted: Albert Haeger, president; F. J. Stippe, secretary and treasurer; and H. B. Moorehouse, vice-president. In a subsequent reorganization the present officers were elected, as follows: F. J. Stippe, president and treasurer; Elizabeth Stippe, vice-president; and B. Jeffers, secretary. From the beginning of operations the industrial plant of the company has been maintained at the present location, and the foundry building is forty by one hundred and forty feet in dimensions, while the concern has ample ground space for its storage houses and for the accommodation of other departments of the enterprise.

The Chicago Wire, Iron & Brass Works manufactures a notably superior line of wire fencing, trellises, window guards, machinery, belting and transmission guards, elevator enclosures, air washers and purifiers, besides a great variety of iron and brass appliances and devices used in leading factories and other industrial institutions. The trade of the company has been extended into all parts of the United States and Canada, distribution of the products being made principally through jobbers, contractors, supply houses and dealers in mill supplies. In prosecuting the effective activities of the substantial business fifteen

or more skilled mechanics are constantly employed, and the concern is one of the important and representative industrial institutions of the kind in the western metropolis.

F. J. STIPPE

Mr. Stippe, president of this progressive corporation and virtually the founder of the same, has been actively identified with his present line of industrial enterprise throughout practically his entire business career, which has covered a period of about sixteen years. Prior to effecting the organization of the company of which he is now the executive head he had achieved distinctive success in the selling and distributing of the type of products which his company is now engaged in manufacturing, and the broad acquaintanceship which he thus gained with the trade, as well as with contractors and factory architects and engineers throughout the various states of the Union proved of great efficacy in connection with the development and upbuilding of the business of the company of which he is now president. He gives his entire time and attention to the supervision of the practical and executive affairs of the well established and prosperous business, and the services of the company's efficient staff of draftsmen and engineers are given unreservedly in consultation and advice with and to the many patrons of the concern.

THE NATIONAL MACHINE WORKS

In the great industrial domain of Chicago this corporation not only has distinctive priority in its field of manufacturing enterprise but to it apply also definite pioneer honors, as its history, under varying control, covers a period of more than half a century. The modern manufacturing plant of the company is established at Sheffield and North avenues and Weed street, and while the concern has the best of facilities for the manufacturing of a widely diversified line of special machinery it has exceptional precedence in the gas engineering and manufacturing phase of constructive industrialism. With no attempt to enter upon the impossible task of offering manifold details concerning the scope and functions of the business, the following extracts from a recent bulletin issued by the company are both interesting and significant:

"The National Machine Works of Chicago has been engaged in the manufacture and design of special machinery, and particularly artificial gas making and handling apparatus, for forty years. During this period its product has been sold without the assistance of salesmen, catalogues or advertising. Its product has been subjected to the closest personal supervision, and the market for its output has been found, supplied and gradually increased through the quality of its workmanship. During the last twenty-six years, however, a close association with the carburetted water gas industry in and around Chicago has enabled it to develop and produce a number of improvements in apparatus and appliances for the manufacture and distribution of water gas. This line of

improved accessories has developed to such an extent that we have found and met a demand for complete generating sets, including condensers and scrubbers, on which practically every fitting shows an improvement in design over other types. Many of these are the development of ideas suggested by our customers and their employes, and many are the products of our own engineering department. We are now placing before the trade at large our complete line of station and street fittings and accessories, confident that the efficiency and economy offered by our improvements over all other designs will commend them to all manufacturers of water gas. In our standard fittings we offer the best quality of materials, prompt service and satisfaction to our customers. In addition, we are in a position to furnish repairs to existing gas-generating sets of old design, including the old Springer sets.

"The National Machine Works' facilities have increased to a large extent, but its product is still subject to the personal supervision of its engineers, and its trade will continue to be held and increased, as in the past, by the quality of its workmanship. The National Machine Works does not maintain an outside erecting force, and therefore is not in a position to contract for work requiring that service."

The various descriptive bulletins issued by this company may be had upon application and give information that is, of course, outside the province of the publication here presented. However, the following brief extracts from another of the bulletins may consistently be entered: "Since 1911 the National Machine Works has been engaged in the designing and manufacture of special and standard gas-burning appliances for the People's Gas Light & Coke Company of Chicago. This work has been carried on under the supervision of the engineers of the company mentioned, thus bringing our designers into exceptionally close touch with the conditions and requirements to be met in the construction of appliances for industrial service. The benefits of the experience thus gained we are now prepared to offer to gas manufacturers and consumers not competing with the Chicago companies."

The National Machine Works is a corporation that succeeded to the ownership of the business previously conducted by the E. Lehmpuhl & Company, and the latter was the successor of John Hollbeck & Company, the founders of the enterprise. In 1857 John Hollbeck established in Chicago a modest blacksmith shop, at the corner of Randolph and Canal streets, and later he admitted to partnership in his growing business Frederick Gottfried, under the firm name of John Hollbeck & Company. Soon afterward the new firm removed to the corner of Canal and Madison streets, where the functions of the original shop were amplified by initiating the successful manufacture of a machine invented by Mr. Hollbeck for the pitching of the interior of beer barrels and kegs. The little establishment also continued to handle an appreciable amount of high-grade job work in the manufacturing of special machinery, and with the passing years the efficient service and correct business policies of the firm brought about a steady and substantial expansion of the enterprise. In 1875 E. Lehmpuhl became one of the principals in the control of the business, and at this time the title of the concern was changed to the E. Lehmpuhl & Company. In 1877 Herman Zitzewitz purchased the interests of John Hollbeck, and new vigor was thus infused in the substantial industrial enterprise. At that time the company em-

ployed ten skilled machinists and the business was almost entirely of local order. At this juncture the company began the manufacturing also of the Ross barbed wire machine, besides continuing the production of the pitching machines. In 1880 removal was made to larger quarters, at 31-33 South Canal street, and in 1885 Mr. Zitzewitz purchased also Mr. Lehmpuhl's interest in the business. He adopted the present corporate title of the National Machine Works in 1889 and has since been president of the corporation, his brother Charles being the vice-president and factory superintendent, and Walter R. Zitzewitz, a son of the president of the company, being the efficient secretary and treasurer.

In 1884 Herman Zitzewitz purchased a tract of land fronting on Weed street and Sheffield avenue, the tract being two hundred and thirty by one hundred and fifty feet in dimensions. Under the present title the business was incorporated in 1889, with a capital stock of fifty thousand dollars, and with executive officers as noted above. The greater part of the year 1891 was given to the completion of the company's present manufacturing plant, on the tract of land previously purchased by Mr. Zitzewitz, and the finely equipped manufactory was occupied by the company in the early part of the year 1892. This modern plant affords an aggregate floor space of eighteen thousand square feet, the force of skilled mechanics now averages seventy in number, and since possession was taken of the present plant the corporation has given special attention to the manufacturing of machinery used in gas production, as has been shown in preceding paragraphs. The products of the establishment are now sold in all parts of the United States and in their superiority, with incidental commendation on the part of patrons, has been the chief medium of advertising aside from the descriptive bulletins issued by the company. The concern is represented in membership in the Illinois Manufacturers' Association, and is one of the substantial and important industrial corporations of the western metropolis.

AMERICAN FURNITURE NOVELTY COMPANY

In the complex fabric of Chicago industrialism this company has no insignificant place, and its business, under careful and efficient control, has been developed from the most modest of proportions to an appreciable and important volume, as is evident when it is stated that the company's industrial plant is the largest devoted to the manufacturing of novelty furniture in Chicago. The company was organized in 1911 and was forthwith incorporated under the laws of Illinois and with a capital stock of five thousand dollars. Emanuel B. Getzoff has been president of the company from the beginning and his has been the dominating force in the development and upbuilding of the substantial and constantly expanding business, Harry Buntman being made vice-president of the company at the time of incorporation. In initiating his new enterprise Mr. Getzoff began the manufacturing of a specially designed triangular hat-rack, and in the little factory at No. 1934 Lake street, there was utilized a floor space of only seven hundred and fifty square feet, the while the original corps of employes numbered only three men. Under the influence of the mechanical skill and progressive policies of Mr. Getzoff definite success attended the new venture,

and within six months it became necessary to obtain larger manufacturing quarters. To make this provision the factory was removed to 1944 Lake street, where was obtained a floor space of twenty-five hundred square feet and where the force of employes was increased to twelve persons. Eight months later another change of quarters became imperative to accommodate the growing business, and at this time the company secured a genuine factory worthy of the name,—a four-story building that gave an aggregate floor space of forty-eight thousand square feet, besides which two additional warehouses were provided, with a floor space of twenty thousand square feet. This constitutes the present modern and well equipped plant of the company, at 2004-6-8-10 West Lake street. Here the manufacturing of the hat racks has been virtually abandoned, and attention is now given to the manufacturing of high-grade novelty furniture, including fine library tables of unique design, tea wagons, serving tables, etc. The business of the company for the year 1908 aggregated twenty thousand dollars, and the splendid advancement that has since been made is significantly indicated in the fact that the business for 1917 will approximate three hundred thousand dollars. In the factory employment is now given to one hundred and twenty-five persons, including a large quota of skilled mechanics, and sixteen traveling salesmen represent the concern in its trade territory, the products being sold in all parts of the United States and their excellence in construction combining with artistic design to make them the most effective medium of advertising that the company can claim. Chicago gives fostering influence in the upbuilding of all manner of normal and reliable business enterprises, and a case in point is afforded in the record of this company, the president of which has, through his own ability and efforts, gained place as one of the successful and representative business men of his native city. The company has membership representation in the Chicago Furniture Men's Association.

EMANUEL B. GETZOFF

Emanuel B. Getzoff was born in Chicago on the 23d of April, 1882, and is a son of Barnett Getzoff, who here established his home fully half a century ago and who won success and prosperity as a merchant. Emanuel B. Getzoff was afforded the advantages of the public schools and at the age of sixteen years he obtained a position as salesman for the Smalley Manufacturing Company. He continued his alliance with this company fifteen years, and as its representative traveled from coast to coast, his record as a salesman giving him prestige as one of the best identified with the commercial activities of the western metropolis. Upon severing his association with the Smalley Manufacturing Company, in 1911 Mr. Getzoff founded the business of which he is now the executive head and of which description is given in the preceding article. He invested his savings in the new enterprise, conducted the business along conservative lines, and his energy, initiative and progressiveness, combined with prior commercial experience, brought merited success to the company of which he is now the president. His affiliation with the Masonic fraternity includes membership in Medinah

Temple of the Mystic Shrine, he is affiliated also with the Knights of Pythias, and his political allegiance is given to the republican party.

January 24, 1914, recorded the marriage of Mr. Getzoff to Miss Mathilda E. Chanock, of Chicago.

MOUNT OLIVE MONUMENT COMPANY

In 1903 this company's now large and substantial industrial enterprise was founded by N. Heldt Henriksen and Emanuel Henriksen and operations were initiated in yards and factory established at the corner of Clark and Irving Park boulevard. The business, conducted upon the highest commercial principles and with marked ability and progressiveness, has signally prospered, and the main office and principal manufacturing plant were continued at the location noted until 1914, when the present plant, which had previously been operated as a branch of the original factory, was notably enlarged, to make provision for the centering of the entire business at this location,—3821-25 North Narragansett avenue. Here the company utilized a ground area one hundred and fifty-three by one hundred and seventy-five feet in dimensions, and has been improved with modern industrial buildings erected by the company for its use. The equipment of the extensive and well ordered plant includes the most modern type of stone cutting and polishing machinery, tools and other requisite accessories, and here employment is given to an average force of about ten expert sculptors and stone-cutters. This is one of the leading institutions of the kind in Chicago and it is widely known for the superior designs and workmanship of its products, which include the more simple as well as the most elaborate and imposing specimens of monumental work.

N. HELDT HENRIKSEN

N. Heldt Henriksen, the founder of this important enterprise, had achieved national reputation as a sculptor and as a creator of the finest type of designs for monumental work, his talent having become noteworthy even in his boyhood, when he produced remarkable specimens of carving in wood and other material. He was born at Aarhus, Denmark, on the 24th of January, 1869, a son of Heldt Henriksen, who was a farmer by vocation. At the age of eighteen years Mr. Henriksen came to the United States and established his residence in Chicago, where he found employment as a stone carver, a work in which he had become specially skillful. For a few years he held the position as carver and sculptor of the monument shops of Gall & Company, and he then determined to establish himself independently as an architectural stone-carver and contractor. His first contract was for the production of the ornamental stone work of the city hall in Omaha, Nebraska, and he developed a substantial and prosperous contracting business, in connection with which he greatly enhanced his reputation as a professional artist in stone work. He continued his activities as a contractor until he became associated with his brother Emanuel in founding the

Mount Olive Monument Company, as noted in a preceding paragraph. Of this company he continued the president until his death. Among the many fine examples of the professional skill and artistry of Mr. Henriksen may be noted the great granite lions that adorn the facade of the E. J. Lehmann mausoleum, in Waldheim cemetery, Chicago; and the state seal of Indiana as produced in Montello Granite and placed in the monument dedicatory of that state. His ability as a sculptor led also to his receiving commissions for the carving of marble busts of various persons of distinction. It is worthy of special note in this review that Niels Heldt Henriksen also designed and executed a statue of a bull buffalo and that the same has been pronounced by the highest authorities to be a wonderful and faithful reproduction. Duplicates of this celebrated statue found a wide sale throughout the United States, and demands for the same still continue. The size of the statue is eighteen by thirteen by seven inches, and on the design and product Mr. Henriksen was granted copyright (No. 53303, G. class) December 19, 1916, only a few days prior to his death. He was engaged in designing and carving the artistic stone ornamentation that mark the front of the Hearst building in Chicago when he was stricken with pneumonia, the attack resulting in his death on the 29th of January, 1917. Mr. Henriksen was a man of lofty ideals, fine mentality and noble character,—a sterling citizen who commanded unqualified popular esteem. He was a charter member of Chicago Lodge, No. 18, Danish Brotherhood, this having been the first lodge chartered in the United States and he having thereafter shown most lively interest in the general development of the organization, which now has more than one thousand lodges in the United States. His religious faith was that of the Lutheran church, of which his widow likewise is an earnest communicant.

Mr. Henriksen was happily married early in life and his widow still retains her residence in Chicago. They became the parents of seven children, and the eldest son, Jens, is now vice-president of the Mount Olive Monument Company. The younger son, Thorvald, has inherited much of his father's talent as a sculptor and has perfected the same through study and practical experience gained under most auspicious conditions. He has already achieved distinction as an artist and sculptor and he devotes much of his time and attention to the designing of the finer pieces of art sculpture that are manufacured by the Mount Olive Monument Company in the filling of its more important contracts. His honored father was an active and valued member of the Chicago Art Institute, and was widely and favorably known in the representative art circles of the United States, his fraternal alliances having included membership in the Humboldt Lodge, Knights of Pythias, and the Hesperia Lodge No. 111, A. F. & A. M.

EMANUEL HENRIKSEN

Emanuel Henriksen, president of the Mount Olive Monument Company, was born at Arthus, Denmark, on the 11th of August, 1878, and was reared and educated in his native land. In the spring of 1901 he joined his elder brother, the late Niels Heldt Henriksen, in Chicago, and here he followed his trade, that of lithographer, until the monument business which he had assisted his brother

in establishing finally attained to such volume as to demand his entire time and attention. He has since been actively engaged in the directing of the business and in January, 1917, he became the successor of his brother as president of the company, shortly after the death of the latter. He is one of the active and valued members of Chicago Lodge, No. 18, Danish Brotherhood, also a member of Denmark Lodge No. 112, K. of P. In 1911 Mr. Henricksen wedded Miss Eva Leonard, of Chicago, and they have two sons,—Emanuel, Jr., and Paul.

GAGE STRUCTURAL STEEL COMPANY

As engineers and contractors for all classes of structural iron and steel, this company maintains its large and modern productive plant at 3123-3141 South Hoyne avenue, and the efficiency of service rendered has gained to the concern distinct precedence in the control of a substantial and representative industrial enterprise. The company was organized and incorporated in 1909, by Lavius C. Gage, Ralph H. Gage and Frank L. Swanson. The original plant of the new corporation was established at 2464 South Paulina street, where requisition was made for a ground area in excess of sixteen thousand square feet, with five thousand seven hundred and sixty square feet under cover. In the early period of operations this force of employes numbered about fifty persons. Energy, correct policies and effective service caused the business to expand substantially in scope within the ensuing seven years, at the expiration of which it became imperative to obtain larger quarters and better operating facilities. In 1916 the company obtained a long-time lease on the land occupied by its present modern plant, the area of the tract being seventy-five thousand square feet. Here were erected by the company substantial buildings specially designed for its use and affording twenty-six thousand square feet of floor space, exclusive of the office building, which is thirty by forty feet in dimensions and gives accommodations also for the drafting rooms, technical department, etc.

The company does general designing and manufacturing of structural steel and iron for buildings, bridges, etc., with special attention given to the manufacturing of such products to meet the requirements of the modern fire-proof system in factory and warehouse construction. The equipment of the company's plant is complete and of the best type in every detail and includes a five-ton electric traveling crane, besides which provisions are being made for the installing of a crane of ten tons' capacity. The plant has direct switchtrack connection with the Atchison, Topeka & Santa Fe Railroad, and its private trackage accommodates ten cars. The company have produced the material for and erected under contract several buildings for the great Chicago corporation of Swift & Company in Australia and South America, as well as buildings for the Commonwealth Edison Company, the People's Gas Light & Coke Company, and supplied also the structural iron and steel for about thirty postoffice buildings erected by the government in various parts of the country. Similar service has been given in connection with the erection of many office buildings of the modern type, including the American Medical Association building, the Textile building and other im-

L. C. GAGE

portant structures in Chicago, including Wood's theater building. The plant has a capacity for the output of about twelve thousand tons annually and gives employment to an average force of one hundred men, including a goodly number of highly skilled mechanics. The company was one of the first in Chicago to adopt the oxy-acetylene torch for the cutting of cold steel, and this insures a great saving in both man and steam power. The present officers of the company are as here noted: Lavius C. Gage, president; Ralph H. Gage, secretary and chief engineer; and Frank E. Swanson, treasurer. Of each of these executives specific mention is made in succeeding paragraphs.

LAVIUS C. GAGE

Lavius C. Gage, president of the Gage Structural Steel Company, was born at Vergennes, Vermont, and has been a resident of Chicago since 1879, in which year he here entered the employ of John V. Ayres' Sons, engaged in the iron and heavy-hardware trade. Later he identified himself with the representative firm of Jones & Laughlin Steel Company, with which concern he had charge of the structural iron and steel department for eighteen years. In 1902 he became associated with the firm of A. Bolters Sons, engaged in the manufacturing of structural steel and iron, and with this concern he continued his alliance until he effected the organization of the Gage Structural Steel Company, of which he has since been president, as noted in the preceding article. Mr. Gage is a captain of industry who has won success and advancement through his own ability and efforts and he is one of the substantial and honored business men of the western metropolis. He is a valued and appreciative member of the Central Manufacturing District Club and the Suburban Club of La Grange, and is actively affiliated with the Masonic fraternity.

RALPH H. GAGE

Ralph H. Gage, C. E. secretary and chief engineer of the Gage Structural Steel Company and a son of the president of this corporation, was born in the city of Hannibal, Missouri, and has been a resident of Chicago since 1880. He is indebted to the public schools for his early educational discipline, which was supplemented by a course in civil engineering in the University of Illinois. Graduated with the class of 1903 and in 1907 received his Civil Engineers degree from the University of Illinois. Mr. Gage is a licensed structural engineer.

For five years he held the position of chief engineer in the employ of A. Bolters Sons of Chicago, and this post he resigned at the time when he became associated in the organization of the Gage Structural Steel Company, as noted in the preceding article descriptive of the company. Mr. Gage is an active member of the Central Manufacturing District Club, the Suburban and the Country Clubs at LaGrange, and is affiliated with the Masonic fraternity, member Sigma Alpha Epsilon Fraternity, also Tau Beto Pi honorary engineering fraternity.

FRANK E. SWANSON

Frank E. Swanson, treasurer of the Gage Structural Steel Company, of which adequate description is given in a preceding article, was born in the city of Galesburg, Illinois, and acquired his earlier education in the public schools of Knoxville, this state, after which he completed a course in Knox College, at Galesburg, in which he was graduated as a member of the class of 1903. In 1906 Mr. Swanson came to Chicago and assumed the position of accountant in the employ of the Otis Elevator Company. In 1909 he resigned this position to become associated in the organization and incorporation of the Gage Structural Steel Company, and he has been a valued factor in the upbuilding of the substantial industrial enterprise controlled by this company. He is a member of the Central Manufacturing District Club, and of the Suburban and Country Clubs of La Grange, in which beautiful suburban village he maintains his residence.

UNITY MANUFACTURING COMPANY

This company with its large and well equipped productive plant at 1632-36 North Halsted street, is one of the important and representative industrial concerns of the kind in Chicago, and its functions include the manufacturing of high grade tools, dies, jigs, gauges, etc., the designing and building of special machinery and parts of all kinds, and general contract manufacturing. The corporation retains a staff of engineers and machinists thoroughly trained along technical lines and fully experienced in the solving of manufacturing and cost reducing problems in industrial lines. In the establishment is handled a large volume of experimental work and the developing of crude mechanical ideas to practical perfection. The factory has complete equipment of modern machinery, tools and general accessories for the prompt and facile handling of all manner metal-working jogs, and the concern is constantly handling a large amount of important work for the leading industrial firms and corporations in Chicago, this department of the business manifesting a constantly increasing tendency. One of the recent and noteworthy achievements made by the Unity Manufacturing Company along the line of mechanical engineering, was the designing of dies and machinery for the rapid production of work of an important government contract, incidental to preparations for the great war in which the nation has been involved. The factory utilizes forty-five hundred square feet of floor space and in the same employment is given to a force of skilled mechanics.

FRED O. HEUSER

Fred O. Heuser, one of the interested principals in the well ordered industrial concern mentioned in the foregoing paragraph was born in Wiesbaden, Germany, in the year of 1882, and there his early education included effective courses in leading technical schools, in which connection he gave special atten-

F. E. SWANSON

R. H. GAGE

tion to the study of draughting, designing and the mastering of technical knowledge of engineering processes. Mr. Heuser established his residence in Chicago in 1902, and here he found employment in the technical department of the Fay-Sholes Typewriter Company. In this connection he gave material and effectual aid in the perfecting of the high-grade visible typewriter manufactured by the corporation. Upon severing his connection with this company Mr. Heuser accepted the post of expert in inventive experimentor in the establishment of Chrono Cost Accounting Company, and here he brought to perfection an electric factory cost-accounting system which is now in actual operation. Mr. Heuser, next turned his attention to the perfecting of a special type of adding machines, and after he had completed this he engaged in business for himself, as a designer of automatic machinery and dies, tools, etc. He was thus engaged until he was tendered the office of superintendent of the factory of the Raleigh Manufacturing Company, which was organized to manufacture munitions for foreign nations at the outbreak of the great European War. Mr. Heuser was responsible for the purchase of the machinery, and other equipment for the factory of this company and supervised the designing of all special machinery and tools needed in connection with the productive operations of the new concerns. He finally resigned his position to associate himself with Fred J. Schylander, in establishing the Unity Manufacturing Company, to the interest of which he has since continued to give his able and undivided attention, with repute as one of the skilled and efficient mechanical engineers of Chicago. In the Masonic fraternity he has become a Knight Templar and also a member of the Mystic Shrine, and is identified with the various mechanical and engineering societies of representative order, while his careful study of the problems of manufacturing costs, factory operation, etc., has resulted in his being frequently called upon for expert advice in the capacity of cost and efficiency engineer in all parts of the United States, and is now devoting time to the reorganizing and equipping an automobile accessory plant in Monroe, Michigan.

FRED J. SCHYLANDER

Fred J. Schylander, coadjutor of Mr. Heuser in the Unity Manufacturing Company, was born in Sweden, in 1882, and in his native land obtained both academic and technical education of excellent order. In 1900 he established his residence in Chicago and prior to becoming one of the organizers of the Unity Manufacturing Company he held the position of assistant to master mechanic in the plant of the Stewart-Warner Speedometer Company, in which connection he designed and perfected a series of special tools and accessories for the facilitating of the concern's manufacturing process besides revising and improving many manufacturing methods that had previously been utilized, and prior to forming this alliance he retained a place as expert tool-designer, developer and inventor for the Flexible Steel Company, for this corporation he designed and perfected complicated gauges and dies for the manufacturing of flexible-steel belt lacing manufactured by the company. Previously Mr. Schylander had held the position of factory superintendent for the Central Wheel

Works. He is the inventor and patentee of an ingenious and remarkably efficient check-cancelling machine. He and his valued coadjutor, Mr. Heuser, are joint inventors of a currency and coin handling devices which they are preparing to place on the market and which is destined to take rank with the cash register and the adding machine as an essential commercial requisite of marked versatility. Mr. Schylander is well and favorably known as a designer of special tools and automatic machinery, and the clients of the Unity Manufacturing Company receive the benefit of his experience in all ways.

THE ALWARD-ANDERSON SOUTHARD CO.

Organized in 1915, succeeding to the majority of the business of E. C. Cook & Brother liquidated which had been for fully half a century engaged in the manufacturing of sporting goods in Chicago, this corporation represents one of the largest and most important of its kind in the Union, and the products of its manufactory go forth into all section of the civilized world in which there is a demand for high grade sporting goods. The well equipped manufacturing plant of this company is the most extensive that Chicago can claim in this particular line of industrial enterprise, and the same is situated at 925-31 West Chicago avenue. In a review of this nature it is not demanded that a detailed list of the products of the factory of the company be entered, but in a general way it may consistently be stated that they include canvas and leather hunting goods of all standard and special designs; leather, corduroy, moleskin and canvas clothing for hunting and other out-door sports, including corduroy and canvas hats and caps; leather and canvas gun and rifle covers of all kinds; cartridge belts and holsters; vacuum bottle cases; fishing rod cases; hunting belts; shell boxes; leggings; fish creels and baskets; canvas bags for divers' uses; motor-cycle clothing; pack sacks; leather carbine scabbards; couch hammocks, tents of all descriptions; tarpaulins; conveyor canvas coal and feed bags; thresher and stack covers; porch curtains; awnings and innumerable other canvas and leather products. The company invented a special design and effective Arctic sleeping bag and army officers' bed roll of which it is the manufacturer, and it also holds patents on a gun case partition, a couch hammock and a duck and goose call that have been successfully introduced. The company occupies a three-story industrial building that is sixty by one hundred feet in dimensions, with an L that is thirty by sixty feet and likewise of three stories. In the factory employment is given to a force of two hundred operatives and to afford the best possible distributing facilities for its varied high-grade products the company has trade representatives as here designated: Henry Kaidel and Company, Baltimore, Maryland, southern representatives. Charles H. Southard, vice-president of the company who has charge of the eastern territory, and was formerly of the company of Keating, Smyth and Southard that was burned out about twenty years ago, he then affiliated himself with E. C. Cook & Brother, representing them in the eastern territory almost continuously until the liquidation of E. C. Cook & Brother. The Canadian trade is in charge of G. L. Cohoon and W. H. Sutton, with offices in the cities of Montreal and Winnipeg. H. L. Bowl-

der, Los Angeles, California, is in charge of the Rocky Mountain and Pacific Coast trade, and Martin Cohn, who has headquarters in Havana, Cuba. The officers of the company are as follows: S. Theo. Anderson, president; Charles H. Southard, vice-president; and Edward Hendrickson, secretary and treasurer, who is a brother of the president of this company, and was engaged by E. C. Cook & Brother about twenty years ago as a bill clerk and advanced to bookkeeper, cashier and credit man, and was finally made treasurer, which office he held until E. C. Cook & Brother went out of business. The president of the company has been for twenty-five years associated with the company of E. C. Cook & Brother, in the establishment of which he worked his way forward from the position of office boy until he became cashier and auditor. He held for some time the office of credit man for the concern and later was assigned to the cost department of the factory, in which position he continued the incumbent until he and his associates succeeded to the business and organized the present company, of which he has since been the executive head, his long and varied experience in the business admirably fortifying him for the directing of the policies of the company and making him one of the leading exponents of this line of industrial enterprise not only in Chicago but also in the entire Union.

THE LOWE BROTHERS COMPANY

Chicago is the Western District distributing headquarters for this important corporation whose factory and General Offices are at Dayton, Ohio. In 1911 the company erected its present modern building at 1048-1058 West Thirty-seventh Street, in the Central Manufacturing District. This building is for its western distribution and its four stories are filled with the company's products in order to give prompt service to this important territory. The building has the best of transportation facilities through direct switch connection with the Chicago Junction Railway.

The Lowe Brothers Company has precedence as one of the country's oldest and most important corporations engaged in the manufacturing of paints and varnishes. Its products are generally known under the brand of "High Standard Paints," Stains and Enamels, and "Little Blue Flag" Varnishes. These are made for all uses—architectural, structural, manufacturing, railroad, marine, etc., and are known for their high quality. In the furtherance of its extensive trade it has consistently adopted Chicago as its Western distributing point, the facilities here provided by the company being of the best possible order. In the local office is retained a force of fourteen employees with numerous salesmen who reach every portion of this territory.

For the trade in the Dominion of Canada a branch factory is established in the city of Toronto. Branch warehouses and offices are maintained in Jersey City, Boston, Kansas City and Minneapolis. The factory at Dayton is extensive and very complete.

E. K. Springer, the manager of the Chicago District, has been engaged in the paint and varnish business for more than a quarter of a century, is a native of Michigan and received his education in Detroit, Michigan public schools. He

joined The Lowe Brothers Company as general salesman in the field in 1902. Mr. Springer came to Chicago in 1887, and is identified with and a member of the Central Manufacturing District Club, Oak Park Club, Masons and Elks.

WILFORD R. SPROUL

A vigorous and progressive young business man who is marking the passing years with specially successful achievement, Mr. Sproul is president of the representative contracting and building corporation known as the E. W. Sproul Company, with headquarters at 1120 West Thirty-fifth street, the supply yards of the company, at all times fully equipped with the various lines of building material, being in the heart of the celebrated Central Manufacturing District of Chicago. With most capable and aggressive management and the best of facilities, this concern has from the time of its incorporation, in 1908, controlled about eighty-five percent of the general contracting work in its line in the district mentioned, and the efficiency of its service is shown in many important buildings as well as in its high standing as one of the leading contracting corporations operating in the great center of the manufacturing interests of the western metropolis. Chas. W. Sproul, a cousin of the president, is vice-president of the company, and G. L. Arquette is its secretary and treasurer. This company erected the first building in the now celebrated Central Manufacturing district, and it has since taken precedence of all other concerns in furthering the development of this district.

Wilford R. Sproul was born in Chicago, on the 2d of November, 1885, and is a son of Elliott W. and Jessie M. (Miller) Sproul, the father having been born in Canada and having been for many years one of the successful contractors and builders in Chicago, where he is now living virtually retired. He whose name initiates this review supplemented the discipline of the public schools of Chicago by a course in the celebrated Culver Military Academy, on Lake Maxinkukee, Indiana. After leaving school he became associated with his father in building operations, and that he might fortify himself thoroughly in all of the practical details of the business he began his service by learning to wield the trowel in the laying of brick. The present corporation of which he is president was formed in 1908, and as its chief executive he has shown marked energy, discrimination and progressiveness, with the result that the business is constantly expanding in scope and importance. Mr. Sproul is a popular figure in the business circles of his native city, as well as in those of social order, and it is specially worthy of note that he is actively identified with the Chicago Association of Commerce, the Chicago Masons & Builders Association, the Building Construction & Employers Association, the Builders Association, and the Carpenters & Contractors Association, all important organizations in Chicago. He is affiliated with the Masonic fraternity, including The Knights Templar and Medinah Temple of the Mystic Shrine, besides holding membership in the Independent Order of Odd Fellows, the Central Manufacturing District Club, the Beverly Club, the Beverly Country Club, and the Saddle & Sirloin Club.

In November, 1906, was solemnized the marriage of Mr. Sproul to Miss Irene

Christian, and they have four children,—Henrietta, Elliott, Wilford R., Jr., and John.

In 1917 Mr. Sproul was appointed by Governor Lowden a member of examining board No. 77, to pass upon the qualifications and fitness of the men drawn under the provisions of the selective draft law for service in the War with Germany, and board No. 77 achieved distinction as being the first in the city to begin official examinations and through it was obtained Chicago's first drafted soldier for the Liberty Army.

THE ACME SAUSAGE COMPANY

The well equipped manufacturing plant of this corporation is situated at 3738-40 Ashland avenue, and the building occupied is a substantial one-story structure that is fifty by one hundred and ten feet in dimensions. The company has developed a very prosperous business in the manufacturing of high-grade sausage, and the preparing of special bacon and boiled-ham products, the trade of the concern being entirely local and based upon the superiority of the output. The company was organized in 1913, as a mutual concern in which the interested principals were a number of men engaged in selling sausage and similar products to the retail trade. The company was incorporated with a capital stock of fifteen thousand dollars, and the original official corps was as here designated: Robert J. Wilde, president; William E. McConnell, vice-president; and Louis W. Lassin, secretary and treasurer. In the following year the election of officers gave to the executive corps its present personnel, namely: William E. McConnell, president; Theodore Rohn, vice-president; and John Cylkowski, secretary and treasurer. The building utilized by the company is a well equipped structure of one story and fifty by one hundred and ten feet in dimensions. The average annual output of the plant is about three hundred thousand pounds, and the Acme brand of products has gained such high reputation that the business of the company is constantly expanding in scope. Mr. McConnell, president of the corporation, has the active management of the business and is known as one of the representative business men of the younger generation in his native city, a brief review of his career being given in appending paragraphs.

WILLIAM E. McCONNELL

The president of the company above mentioned was born in Chicago in the year 1886 and is indebted to local schools for his early educational discipline. At the early age of sixteen years he initiated his independent career by establishing himself in the wholesale provision business, with headquarters at 6527 Sangamon street. His energy and progressiveness enabled him to develop a prosperous enterprise and he continued his operations until he became associated in the organization of the company of which he is now president. The Acme Sausage Company has a force of somewhat more than thirty employes and in the handling of its products utilizes three automobile trucks and three horse-drawn wagons.

In politics Mr. McConnell pays allegiance to the republican party and he is prominently affiliated with the time-honored Masonic fraternity, in which he holds membership in Bauriey Blue Lodge of Ancient Free & Accepted Masons; Fairview Chapter, Royal Arch Masons; Mount Joy Commandery of Knights Templars; Oriental Consistory of the Ancient Accepted Scottish Rite; and Medinah Temple of the Mystic Shrine. He is affiliated also with the Royal League. The name of Mr. McConnell still remains on the roll of eligible young bachelors in his native city and he resides at 6527 Sangamon street.

THE B. F. GUMP CO.

At 431-437 South Clinton street is situated the large and modern industrial plant of the B. F. Gump Co., manufacturers of flour and feed mill machinery, one of the most important in this field of enterprise in the western metropolis, with a business that is on a parity with the excellent facilities and service of the old established enterprise. The business was founded in 1872, by the late Benjamin Franklin Gump, who was one of the vigorous and ambitious men of affairs who gave large assistance in reviving the prostrate industries of Chicago after the ever memorable fire of 1871. He established his business in an individual way, with headquarters at 51-53 South Canal street, as indicated by the city's former system of street numbering. There he developed a large and prosperous business within the passing years and there he utilized an aggregate floor space of forty thousand square feet. Mr. Gump continued the enterprise in an independent way until 1901, and it was then placed in control of the B. F. Gump Co., which was duly incorporated under the laws of Illinois and with officers as here noted: George W. Moore, president; A. D. Dorman, vice-president; and Joel J. Ellis, secretary and treasurer. At this juncture was effected a virtual reorganization of the business, which consisted mainly in the rebuilding of machinery for flour and feed mills. At the original location the business was continued until 1909, when the building occupied was razed, incidental to the work of constructing the present fine passenger station of the Chicago & Northwestern Railroad. This enforced vacation of its plant led to the removal of the business to the present location, the modern industrial building here utilized having a floor space of ninety thousand square feet. In the new establishment the company initiated the manufacturing of flour, feed and cereal mill machinery, coffee and spice mills and other special machines now extensively utilized by wholesale grocers, bakers and manufacturers of chemicals. Many such special machines of the highest grade have been developed by the present management. The company originated and developed the salient features in the LaPage patent Corrugation on Roller Mills, which has revolutionized the process of producing cracked corn for poultry and stock food, and other devices developed by the company are a steel-cutting machine for the grinding of coffee, the same having proved of wonderful versatility and adaptability in the manufacturing of all kinds of cut cereals. Here has been developed also the "Bar-Nun" Grinder a valuable machine for the reduction of all kinds of

B. F. GUMP COMPANY

cereals, screenings, etc., in one operation. The business is constantly expanding in scope and importance.

In 1910, Mr. Ellis retired from the business and was succeeded by William M. Williams, who is the present secretary, treasurer and general manager of the company and under whose direction has been made great advancement in the manufacturing of machinery and the handling of general lines of mill supplies, including transmission devices. Under his effective regime the business has been increased more than threefold. In addition to the extensive trade controlled throughout the United States an excellent business has been developed in the Canadian provinces and in Mexico. The factory employment is given to an average force of eighty-five men, the most of whom are skilled artisans. The company has membership in the Chicago Association of Commerce, the National Metal Trades Association, the Chicago Credit Men's Association, The American Feed Manufacturers' Association and the Machinery Club of Chicago.

William M. Williams, secretary, treasurer and general manager of the B. F. Gump Co., duly described in preceding paragraphs, was born in the city of Columbus, Ohio, on the 1st of June, 1874, and in the capital city of the old Buckeye state he received his early education. He was a lad of about fourteen years when he came to Chicago, in 1888, and thereafter he continued in the employ of the C. H. Gurney Co., wholesale hardware, until 1891, when he allied himself with the Whitman & Barnes Manufacturing Company. With this concern he won merited advancement and in 1901 he was made manager of the Chicago branch, the manufactory of the concern being established at Akron, Ohio. In 1903 Mr. Williams resigned his position with this company and became one of the principals in the organization and incorporation of the Whitaker Manufacturing Company, of which he served as secretary until 1909, when he resigned this office to identify himself with the B. F. Gump Co., of which he has since been secretary, treasurer and general manager and contributed largely to the expansion of the business through his vigorous and progressive policies. Mr. Williams is an aggressive business man and has gained secure place in connection with the industrial activities of Chicago. He is identified with various civic and social organizations.

Julius H. Reed has been closely associated with the development and upbuilding of the prosperous industrial enterprise of the B. F. Gump Co., of which mention has been made in a preceding article, and his connection with the enterprise covers a period of fully thirty-five years, so that he is well entitled to specific recognition in this volume.

Mr. Reed was born at Lee, Massachusetts, June 17, 1842, a scion of one of the sterling colonial families of New England, and in his native town he acquired his early education, his initial business experience having there been gained through his service as a telegraph operator in a local railway station. Later he held a position in a bank at Lee and later he took a commercial course in a business college at Worcester, Massachusetts, this having been one of only two institutions of the kind then established in the United States. In 1862, at the age of twenty years, Mr. Reed went forth to do loyal service as a soldier of the Union. He enlisted in the Thirty-seventh Massachusetts Volunteer In-

fantry, and with this command he served three years,—or until the close of the conflict through which the integrity of the nation was perpetuated. He took part in the various campaigns in which his regiment was involved, participated in many important battles, including that of Fredericksburg, under General Burnside, and the last engagement in which he took part was the battle of Sailor's Creek, Virginia, on the 6th of April, 1865. He was mustered out as first lieutenant of his company, and in the later years he has vitalized the more gracious memories of his military career through appreciative affiliation with the Grand Army of the Republic.

After the close of the war Mr. Reed removed to Cedar Rapids, Iowa, and there he became associated with John I. Blair, who was engaged in the construction of the line of railroad that is now a part of the Chicago & Northwestern system. At Cedar Rapids, in the year 1868, Mr. Reed wedded and in the following year he removed with his wife to Omaha, Nebraska, where he took a position in the land department of the Union Pacific Railroad. In 1876 he became associated with his father in the milling business at Boone, Iowa, and incidentally he later served as secretary of the Iowa Millers' Association. In 1881 the mill operated by Mr. Reed was destroyed by fire, but he erected and equipped a new mill, which was operated under the title of the Reed Milling Company. While thus engaged in business Mr. Reed formed the acquaintance of the late Benjamin F. Gump, and in September, 1882, he entered the latter's employ, his association with the business now conducted under the title of the B. F. Gump Co. having continued without interruption during the long intervening period of thirty-five years and his services having been in various executive capacities and his being in thorough familiarity with all details of the business, he has a wide acquaintance with the trade and is one of the veteran and valued attaches of the company.

THE WHITE EAGLE BREWING COMPANY

The fine plant of this representative Chicago brewing corporation is situated at the corner of Thirty-eighth street and Racine avenue, in the celebrated Central Manufacturing District, and this is one of the younger companies to enter this specific field of enterprise in the city. The original plant, at Ashland avenue and Seventeenth street, soon proved inadequate, and in 1910, about two years after the organization of the company, removal was made to the present plant, which was purchased at that time and which had previously been owned and utilized by the Illinois Brewing & Malting Company. In 1914, owing to the substantial expansion of the business, it was found expedient to erect an addition to the plant, and this involved the expenditure of more than one hundred thousand dollars.

The White Eagle Brewing Company was organized and incorporated in 1892, and the original capital stock of fifty thousand dollars has since been increased to two hundred and fifty thousand. It is specially worthy of note that this is the only brewing concern in Chicago whose capital stock is held entirely by men

engaged in the retail liquor business, and the harmonious relations that have existed at all times have resulted in the progressive policies that have made for assured success and for the output of a product of constantly maintained excellence. The plant of the company utilized a ground area two hundred and fifty feet square, with frontage on Racine avenue, Thirty-eighth street and Wall street. The fine Bavarian beer manufactured by the company has achieved special popularity and is noted for its high standard, the annual capacity of the institution being for the output of one hundred thousand barrels of beer. Through the medium of the Chicago Junction Railway the establishment has direct transportation facilities. Those who figured as the principals in the organization and incorporation of the White Eagle Brewing Company and who are still its principal stockholders are Leonard Rutkowski, president of the corporation; Sylvester Wesklinski, treasurer; Henry Norvak, secretary; Michael Zaworski, vice-president, who with others, constitute the board of directors.

LEONARD RUTKOWSKI

The president of the White Eagle Brewing Company was born in the city of Dirshau, Poland, in the year 1870, and there he acquired his early education. He was fourteen years of age when he came to the United States, in 1885, and he served an apprenticeship to the trade of brick mason in which he became a skilled workman. He continued to follow the work of his trade in Chicago until he identified himself with the retail liquor business and from the latter he eventually advanced into the field of industrial enterprise in which he now holds a prominent position, as the executive head of one of the substantial brewing corporations of the western metropolis. An energetic, upright and sincere man, he has brought to bear in his business and civic relations the best of principles, and the company of which he is president has for several years passed declared annual dividends of twenty-five per cent. to its stockholders. He is affiliated with the Royal Arcanum and the Polish National Alliance.

In 1896 was solemnized the marriage of Mr. Rutkowski to Miss Anna Titlowski, and they have eight children. The religious faith of the family is that of the Catholic church.

AMERICAN METAL WARE COMPANY

At the corner of Huron and Sedgwick streets is established the well equipped factory of this corporation, which is one of the largest and most important of its kind in Chicago and which controls a substantial business in the manufacturing and sale of a large variety of metal-ware products and varied specialties of the same order. The concern, under various changes in control and management, dates its virtual inception back to the year 1893, and the upbuilding of the splendid enterprise has been primarily due to the technical skill and progressive

policies of the president of the Company, Adolph Hartmann, who now has as his effective and valued coadjutors in the business his sons Carl A. and Adolph O., the former of whom is treasurer and the latter secretary of the company. So closely parallel with the history of the business runs the record of the career of its able chief executive that it is deemed expedient to reveal the same more specifically through the following resume of the activities and achievements of Adolph Hartmann, who may well be considered one of the pioneer business men of Chicago at the present time, as he has maintained his home in this city for more than fifty years.

ADOLPH HARTMANN

The president of the American Metal Ware Company was born at Hailbronn, Kingdom of Würtemberg, Germany, on the 6th of December, 1851, and is a son of Johann C. and Caroline (Schuchmann) Hartmann. Mr. Hartmann attended the schools of his native place until 1865, when at the age of about fourteen years, he came to America and joined his brother Frederick in Chicago, the latter having established a home in this city in 1854 and having here become successfully engaged in business as a tin and coppersmith. Under the able and kindly direction of his brother Adolph served a most thorough apprenticeship as a tin and coppersmith, and he continued in the employ of his brother until 1877, when he purchased his brother's business, the same having been conducted in a basement at the corner of Michigan and Wells streets and having been one of modest order. In thus initating his independent career Mr. Hartmann worked diligently at his trade and in the connection kept himself on an equal footing with the other few artisans whom he employed. His energy, close application and technical skill so combined with his straightforward and reliable business policies as to bring about a substantial expansion of the enterprise from year to year, and eventually he became known as the owner of the largest Chicago plant devoted exclusively to the galvanized-iron cornice and roofing business. He admitted Otto O. Clausen to partnership, under the firm name of Hartmann & Clausen, and the business of the firm continued to advance in scope and importance. At this period the firm was the only one in the city to furnish the metal equipment for the construction of ice machines, and in supplying such material a further development of the enterprise was effected. In 1878 the firm moved

ADOLPH HARTMANN

to more eligible quarters, at 143 Wells street, and there the business was continued until 1893. Mr. Hartmann then retired from the firm and presented his interest in the business to his elder brother, Fred. In the year that thus marked the opening of the World's Columbian Exposition in Chicago, Mr. Hartmann purchased property at 368 and 370 West Huron street, and there he erected a modern brick factory of four stories and basement and with lateral dimensions one hundred forty-three feet, so that there was made available an aggregate floor space of twenty-one thousand four hundred and fifty square feet. In this building, which he equipped with the best of machinery and accessories, Mr. Hartmann engaged in the manufacturing of brass bedsteads and hot-water and coffee urns of copper, besides stamped metal ware of various description. Special attention was given to the manufacturing of the copper urns, and this phase of the enterprise still continued an important part of the substantial business now controlled by the American Metal Ware Company, they being the largest manufacturers of these urns west of Buffalo. At the factory was conducted also a department devoted to job work in stamp, drawing and other kinds of metal work. It was in the year 1893 that Mr. Hartmann effected the incorporation of the business, under the title of the Breitling Metal Ware Company, and he became president of the new corporation, while Karl Breitling became manager, and Gustave Steiglitz secretary. In 1898 Mr. Hartmann purchased the interests of the other stockholders and changed the title of the corporation to its present form, the American Metal Ware Company. It was at this juncture that his sons Carl A. and Adolph O. became associated with him in the business. In 1893 the original company gave employment to an average of twenty metal-workers, and such was the growth of the business that within a short time it became necessary to double the force of artisans. At the present time is retained a corps of from sixty to eighty skilled workmen, and the business of the company has been extended into many different states of the Union, specially those normally tributary to Chicago as a distributing center.

The "American" and "Eureka" electrically heated hot-water urns that are manufactured by the American Metal Ware Company, are of superior attractiveness and mechanical excellence, the patents on the same are controlled by the company and the urns have found a wide demand, owing to their pleasing design, their simplicity in operation, their perfect sanitary provisions and their durability. These high-grade urns are sold in all parts of the country and by their very superiority constitute their own best advertising.

Aldoph Hartmann has been in the fullest sense one of the world's productive workers, and his success in business has been the direct result of his own well ordered efforts. He now has secure place as one of the successful exponents of manufacturing enterprise in Chicago, and here he has the confidence and esteem of all who know him. He was one of the organizers of the Swabian Verein, of which he was treasurer for many years, and is identified also with the Chicago Turngemeinde and Harmonie Singing Society.

At Ottawa, Illinois, on the 31st of May, 1874, was solemnized the marriage of Mr. Hartmann to Miss Caroline Knoedler, and they have three children,—Carl A., Amanada (Mrs. F. W. Freytag) and Adolph O.

CARL A. HARTMANN

As treasurer of the American Metal Ware Company Mr. Hartmann has proved an able assistant to his father in the administration of the business and he is one of the progressive business men of the younger generation in his native city. He was born in Chicago on the 26th of April, 1875, and in addition to receiving the advantages of the schools of his native city he also had the privilege of attending school in the city of Stuttgart, Germany. As a youth he learned the brewing business in a scientific way, and thereafter he had practical experience as superintendent of breweries at Logansport, Indiana, and Aurora, Illinois. He continued his association with this line of industry until 1905, when he assumed his present office, that of treasurer of the American Metal Ware Company. He is a member of the Hamilton Club and the Germania Club, as well as the Chicago Swabian Verein, and he is affiliated with the Benevolent & Protective Order of Elks.

ADOLPH O. HARTMANN

The secretary of the American Metal Ware Company was born in Chicago on the 25th of June, 1887, and after having profited duly by the advantages of the public schools he entered St. John's Military Academy, at Delafield, Wisconsin, in which he was graduated as a member of the class of 1905. His entire business experience has been in connection with the substantial industrial enterprise founded by his father, as noted in preceding paragraphs, and as a vigorous and resourceful young business man he is well upholding the prestige of the family name. He holds membership in the Chicago City Club and the Illinois Athletic Association. In the year 1913 Mr. Hartmann wedded Miss Frances Baumann, daughter of Ferdinand O. Baumann, a prominent manufacturer and influential citizen of Chicago, where he was until recently the president of the F. O. Baumann Manufacturing Company.

THE STAR BRASS WORKS

Industrial efficiency and superiority of products have brought about the development of the Star Brass Works from the status of modest operations to that involving the conducting of an extensive and well ordered manufacturing business, and the executive head of the enterprise has been its founder, Joseph Binks, who is president and treasurer of the corporation. The business dates its inception from the year 1898 and the original capitalistic investment was only twenty-five hundred dollars, the capital stock being placed at this figure when articles of incorporation were filed. Joseph Binks has been president and treasurer of the company from the beginning and has vigorously and effectively directed the policies of the enterprise. John Greaves continued as secretary until he sold his interest in the business when he was succeeded by the present secretary, Edward W. Peterson, who has proved a most able coadjutor of the founder of the institution.

In a little shop that afforded less than five hundred square feet of floor space Mr. Binks initiated the manufacturing of improved types of spraying machines, his experimentation in the devising and improving of such mechanisms having been initiated in 1893, and splendid results having been achieved in his inventive work between that time and 1898, in which latter year he became the organizer of the Star Brass Works, the special province of which was to take up the manufacture of the high-grade spraying machines that bear his name and that have now attained to international reputation. In the little jobbing shop which he established in 1898 Mr. Binks manufactured and sold during the first year five of his improved spraying machines, and since that time the growth of the business has been almost phenomenal, though the increment is to be looked upon as but the normal result of the acknowledged superiority of products. From time to time the little factory was enlarged to meet the demands of the constantly expanding business, and in 1903 Mr. Binks removed his manufacturing plant to the Marine building, at the corner of LaSalle and Lake streets, where requisition was made for five thousand square feet of floor space and where the force of employes was increased to about ten persons. In the meanwhile the products of the factory had found sale in the most diverse sections of the United States, and the trade has been extended also to the Philippine Islands, into European countries and into the Orient, the Chinese government having officially made adoption of the use of the Binks sprayers.

In 1908 the manufactory was removed to a building at the corner of Jefferson and Lake streets, and three years later removal was made to 1911 Fulton street, where an entire building was leased, with a floor space of thirteen thousand and five hundred square feet. By this time the enduring success of the enterprise had been so fully assured that Mr. Binks felt justified in making provision for the erection and equipment of a factory building of his own. Accordingly he purchased a tract of land on Carroll avenue, between Kedzie avenue and Albany street, the site having an area of eighteen thousand square feet. Here he erected a thoroughly modern daylight industrial building, the same having been designed specially for the uses to which it was to be applied, and the mechanical equipment in all departments being of the best modern type. Fireproof vaults are provided for the safe storage of all patterns and special tools devised for the manufacturing of the various types of sprayers, and in April, 1917, the Star Brass Works was removed to this fine new plant. In the same year the company initiated the manufacturing of a patented gas-washing device, and the same is now used in large steel furnaces in all parts of the world. This invention is owned and patented by the company, as is also the improved pump that is here manufactured for specific use in the inflation of automobile tires. The output of this well ordered industrial plant includes hand and power spray pumps; whitewashing and painting machines; spray nozzles for cooling water, washing gas, settling dust; spraying road binders; irrigating, lawn and park sprinklers; pneumatic water pumps; electrically driven tire pumps; overhead vehicle washers; automatic self-closing valves for water; air blow-guns; and other high grade products of similar order. The Binks spraying machines are manufactured in a variety of designs, sizes and styles, and represent the maximum excellence in construction as well as in specific efficiency in application to the varied uses for which they are specially designed. Catalogues and

other descriptive matter published and issued by the company give adequate information concerning the various products manufactured and such literature is supplied to all who desire such detailed information. The great success that has attended the introduction and continuous usage of the machines and accessories manufactured by the Star Brass Works offers the fullest assurance of the distinctive superiority of the products, and each successive year records a material expansion in the business of the progressive and representative industrial concern to which attention is here consistently directed.

JOSEPH BINKS

Joseph Binks, the founder and executive head of the Star Brass Works, was born in Dane county, Wisconsin, on the 8th of July, 1850, and is a representative of one of the sterling pioneer families of that section of the Badger state. His rudimentary education was gained in a log school house of the true pioneer type, but his broader intellectual training has been acquired under the direction of that greatest of head-masters, experience, as he was a boy of only ten years when he began to provide for himself and to learn the lessons of practical industry. In 1857 his parents removed to Madison, the capital city of Wisconsin, and there the boy Joseph assisted in the support of himself and other members of the family by selling papers, serving as bootblack and officiating as a hotel bellboy. At the age of fifteen years he left the parental home, and for two years thereafter he worked as cabin boy on steamboats plying the upper course of the Mississippi river. In 1866 Mr. Binks, an ambitious and self-reliant youth of seventeen years, came to Chicago, and here his first service was in the capacity of boiler tender and bootblack in a barbershop at the corner of Randolph and LaSalle streets. Several months later he returned to Wisconsin, where he continued his residence until 1872 when he again came to Chicago, which city has been the stage on which he has so directed his activities as to achieve large and worthy success.

JOSEPH BINKS

His character has been moulded and made strong in the school of struggle, and he has so earnestly and honestly pressed forward to the goal of his ambitions as to merit the fullest sense the proud American title of self-made man. Upon his return to Chicago Mr. Binks put his mechanical ability and experience into play by securing a position as assistant engineer in the retail mercantile establishment of Marshall Field & Company, wholesale, Madison and Market streets, which even at that time was one of the leading concerns of the kind in the middle west. After three years of efficient service in this capacity Mr. Binks accepted the position of chief engineer for the J. M. W. Jones Printing Company, and with this representative corporation he continued his alliance for the long period of twenty-five years, during which he carefully saved his earnings and maintained his unassailable reputation for industry, reliability and sterling integrity in all of the relations of life. By judicious investment of his earnings he had in the meanwhile accumulated thirty thousand dollars, and in 1895 he resigned the position in which he had so long given service and decided to indulge himself in a trip to the west. While at Boulder, Colorado, he was persuaded to purchase an interest in mining properties and to identify himself actively with the development of the same. Like many another who has thus ventured into new fields of enterprise, Mr. Binks here met his Waterloo, for after two years devoted to the exploitation of the mining prospects he found that the savings of years had disappeared and that the incidental experience was practically the only asset left to him. He was forty-five years of age when he encountered this financial disaster, but he is not the type of man to harbor discouragement or apathy, and he girded himself staunchly for the purpose of retrieving his fortunes. He returned to Chicago, where he had made a reputation as an honest, hard-working man, and here his friends and well-wishers rallied to his side, men of prominence and influence giving him the financial support that enabled him to start anew his advancement toward the goal of substantial success. Of his remarkably successful achievement in the intervening years the foregoing record of the Star Brass Works gives ample assurance.

The year 1873 recorded the marriage of Mr. Binks to Mary A. McFatridge, of Oshkosh, Wisconsin, and concerning the children of his gracious union the following brief data are available: Nellie is the wife of Louis Oldenburg, of Oshkosh; Benjamin is a member of the 37th U. S. Infantry Medical Department; Harry D. is now vice-president of the Star Brass Works; Jessie is the wife of Albert Deutscher, of Jacksonville, Illinois; Jennie is the wife of Alex Hassell, of Oak Park, Illinois; and Miss Irene Dorothy remains at the parental home.

ROXANA PETROLEUM COMPANY

This company is a rapidly expanding subsidiary of the Royal Dutch Company of London and The Hague. Its production lies in the Healdton and Cushing fields of Oklahoma and a large refinery is in operation at Cushing. Another refinery, to have a capacity of 25,000 barrels, is under construction at South Wood River, Illinois, and will be supplied by ten-inch pipe line from the Oklahoma fields. Its construction will be completed during 1918. The principal

offices of the company are at Tulsa, with General Sales and Traffic Departments located in the Continental and Commercial Bank Building, Chicago, Illinois, of which latter office Mr. Wm. O. Andrus, formerly connected with the Standard Oil and the Texas Companies, is now general sales manager.

THE LION VARNISH COMPANY

The highest type of executive and technical ability has been the dynamic force conserving the development of the now extensive and well ordered industrial enterprise controlled by this representative Chicago corporation, and the modern manufacturing plant of the company is established at 2215-2245 North Crawford avenue. In the manufacturing of the highest grades of varnishes and stains the unexcellent material facilities of the company are reinforced by the high technical skill of the interested principals of the company, the president of which is one of the most prominent and influential exponents of the varnish industry in the United States.

The business now conducted by the Lion Varnish Company was founded in 1902, by Karel De Leeuw, who instituted operations upon the most modest scale and with almost primitive facilities. With a barrel and stick as basic facilities he began to manufacture high-grade varnish, and his first factory was a small room on South State street, these insignificant quarters being adequate to accommodate his meager equipment and his activities at the start having been carried forward without the assistance of even one employe. His technical ability was unmistakable and though he turned out a most meritorious product his lack of adequate capital did not permit him to exploit the business on a scale commensurate with its merits. However, the superiority of the product gained gradually in popular favor and demand and in 1911 Mr. DeLeeuw was justified in securing larger quarters. He accordingly rented a portion of one floor of a building at the corner of Thirty-fifth street and Cottage Grove avenue, where he continued operations under the title of the Lion Varnish & Shellac Works, with an appreciable supporting patronage of local order. In the autumn of 1911 Richard W. Clough and Roy R. Brown, well known in connection with the varnish and paint industry, effected the purchase of the business established by Mr. DeLeeuw and reorganized the same under the present title of the Lion Varnish Company. The new company was incorporated with a capital stock of forty thousand dollars and new life was forthwith infused into the business, besides which plans were immediately formulated for the erection and equipment of a modern manufacturing plant through which the enterprise might be effectively developed. A tract of land was purchased on what is now North Crawford avenue, and there a modern varnish plant was erected, the same having been placed in operation in December of the same year,—1911. This factory has a storage capacity of five thousand barrels, has in commission four fires for the compounding of products, and in the factory is retained an adequate force of skilled employes, besides which five traveling salesmen represent the company throughout its extended trade territory. The sales for the year 1912 approximated about forty thousand dollars, and the splendid growth of the business is

indicated that the transactions for the year 1918 will be considerably in excess of one hundred and fifty thousand dollars. The company has a large local trade and the business has been extended also through the various states of the middle west, besides which a well established export trade has been developed, especially in Greece and in various South American countries. The principal products are hard-body varnishes, and the company also produces the best grades of enamels, japans, shellacs, etc. The Lion floor finishes and varnishes, interior finishes, copal varnishes, exterior finishes, spar varnishes, wood fillers, japans, dryers, enamel and porcelain finishes, coach varnishes, hard-oil finishes, automobile and carriage varnishes, wood stains, etc., have an established reputation that constitutes one of the company's best commercial assets, and the Lion trademark veritably stands exponent of the production of the "King of All Varnishes."

The first corps of officers of the Lion Varnish Company was as here designated: Richard W. Clough, president; Roy R. Brown, vice-president; and Karel DeLeeuw, secretary and treasurer. In the spring of 1915 Mr. DeLeeuw sold his interest in the business to his two associates, and since that time Mr. Clough continues as president of the company, while Mr. Brown not only retains the office of vice-president but also those of secretary and treasurer.

RICHARD W. CLOUGH

Richard W. Clough, president of the Lion Varnish Company, is one of the best known men in the varnish industry of America and in this field of enterprise he has well upheld the high prestige of the family name, his father having been an expert in the manufacturing of varnishes and allied products.

Richard William Clough was born in the city of Newark, New Jersey, on the 7th of August, 1860, and is a son of Richard and Martha (Collins) Clough. His father, a native of England, was a skilled varnish-maker and as such was the first expert workman employed in the establishment of the Chicago Varnish Company, with which he continued his association many years. His son John, likewise a technical expert in this field of industrial enterprise, has been in the employ of the Chicago Varnish Company for more than thirty years. He whose name introduces this review was a child at the time of the family removal to Chicago, and here he received his early education in the public schools. In the factory of the Chicago Varnish Company he learned the trade of varnish-making under the able and punctilious direction of his father and after having been in the service of this company five years he accepted a position with Grace & Company, a concern engaged in the same line of manufacturing. This alliance continued until 1890, having in the meanwhile been advanced to the position of superintendent of the manufacturing department. Thereafter he held a similar position in the plant of the American Varnish Company, of Chicago, until the 1st of July, 1904, when he became associated with William H. Noake and Edwin S. Wheeler in the purchase of the plant and business of the Watts DeGolyer Company, a well established varnish concern. The business under the new management was reincorporated, under the title of the Noake-Wheeler-Clough Company, Mr. Clough continuing as vice-president of this corporation until 1908 and

thereafter holding a similar office with its successor, the Wheeler-Clough Company until 1911, when he sold his interest in the business and, as noted in the preceding article, became one of the organizers of the Lion Varnish Company, of which he is now the president, his entire active career having been one of close identification with the varnish industry, in which he is a recognized authority, and his effective executive policies having been a potent influence in developing the substantial business of the company of which he is now the administrative head. Mr. Clough gives his support to the republican party, finds his chief recreation through the medium of the automobile, and in an unassuming way is liberal and progressive in his civic attitude.

On the 10th of May, 1880, was recorded the marriage of Mr. Clough to Miss Lena Peters, of Chicago, and they have three children,—Julia, Richard and William, the only daughter being the wife of Roy R. Brown, vice-president, secretary and treasurer of the Lion Varnish Company.

ROY R. BROWN

Roy R. Brown, vice-president, secretary and treasurer of the Lion Varnish Company, has been one of its efficient executives from the time of its incorporation, in 1911, and his energy, initiative and well fortified commercial policies have been distinct contributing forces in the upbuilding of the important industry controlled by this representative concern. Mr. Brown was born at Dexter, Dallas county, Iowa, on the 13th of November, 1876, a son of Marion W. and Sadie A. (Junkins) Brown, who still reside at Dexter, the father having been one of the successful pioneer exponents of agricultural industry in the Hawkeye state. Roy R. Brown attended the public schools of his native village until he had profited by the advantages of the high school, and at the age of sixteen years he left the parental home and went to northwestern Texas, where he worked on cattle ranches and gained other practical and varied experience in connection with semi-frontier life. At the age of nineteen years he returned to Iowa and established his residence in the city of Oskaloosa, where for five years he served as salesman and assistant branch manager for the Cudahy Packing Company. In 1900 he came to Chicago and took a position as salesman for the Wadsworth-Howland Paint Company, with which concern he continued his alliance seven years, during the latter part of which period he had full charge of the jobbing sales department, with supervision of the extensive trade controlled from this department throughout the United States and Canada. In 1907 Mr. Brown purchased an interest in the Noake-Wheeler-Clough Company, varnish manufacturers, and he continued his association with this concern and its successor, the Wheeler Clough-Company, until 1911, when he and his father-in-law, Richard W. Clough, sold their interests in the business and organized the Lion Varnish Company. Of their association with the latter corporation adequate data have been given in the two preceding articles. Mr. Brown is a member of the Paint, Oil & Varnish Club of Chicago, the Chicago Athletic Club and the Mystic Club. He is affiliated with the Masonic fraternity, including Medinah Temple of the Mystic Shrine.

June 28, 1908, recorded the marriage of Mr. Brown to Miss Julia Clough, daughter of Richard W. Clough, president of the Lion Varnish Company, and the two children of this union are Richard Roy, and Roy Marion.

HENRY ROOS FOUNDRY COMPANY

Among the many basic foundry concerns that constitute an important element in connection with the industrial supremacy of Chicago a place of no secondary priority is to be conceded to the corporation whose title introduces this paragraph, the business having been founded by Henry Roos, who is president of the company and whose association with the foundry industry has covered a period of nearly half a century. In 1879, as a young man of twenty-five years, Henry Roos immigrated to America from his German fatherland and established his residence in Chicago. He had served the requisite period in the German army and had also completed in his native land a thorough apprenticeship to the trade of iron moulding, so that he was well fortified for productive industry when he established his home in the United States. Soon after his arrival in Chicago he found employment in the foundry of Peter Grote, the location of the plant being at what is now about 215 North Jefferson street. Six months later Mr. Roos accepted a better position, with the Peter Roeder Foundry Company, the executive head of which was the late Andrew Haskins, and this alliance continued until 1889, when Mr. Roos initiated his independent business career by forming a partnership with Louis Baumgartner and Matthias Hauk and organizing the Roos Foundry Company. The new concern established its foundry on Fairfield avenue, in juxtaposition to the tracks of the Chicago, Milwaukee & St. Paul Railroad, and here operations were initiated on a modest scale,—in consonance with the limited capital which the principals were able to invest in the enterprise. All three of the partners were skilled artisans and for the first two and one-half years they found it necessary to employ only one additional moulder. In 1891 the company completed the erection and equipment of its own foundry plant, and ere five years had elapsed Mr. Roos had purchased the interests of his partners and assumed full control of the well established business, the Roos Foundry having gained reputation for high-grade work and effective service. The business continued to expand in scope with the passing years, and operations were continued in the plant on Kimball avenue until 1915, the force of employes having in the meanwhile been increased to an average of more than fifty experienced foundrymen. On the 1st of March, 1897, as a matter of commercial expediency, Mr. Roos incorporated his business under the Illinois laws and with a capital stock of twenty-five thousand dollars. From a merely local business the industry was gradually developed until the products of the foundry found demand in the principal cities of the middle west, a large part of the business having been in the manufacturing of hangers and pulleys.

In 1915 Mr. Roos completed the erection and equipment of his present modern manufacturing plant, on Ballou street, with office number at 1749 that thoroughfare. The industrial building was completed at a cost of fifty-eight thousand dollars and is one of the most attractive in design and the most finely

equipped of all similar institutions in Chicago,—a veritable monument to the enterprise and progressiveness of Mr. Roos. This plant gives an aggregate floor space of nearly twenty thousand square feet and every department is of the highest standard in equipment and management. Mr. Roos has enlisted no outside capital in the development of his substantial business and has been president of the company from the time of its incorporation, the while his son Henry W. is secretary of the corporation.

HENRY ROOS

Henry Roos, founder and president of the Henry Roos Foundry Company, was born in the province of Nassau, Germany, on the 15th of February, 1854, a son of Ludwig Roos, whose father, John Roos, a native of Holland, was the founder of the family in the German province mentioned. John Roos was a man of large financial resources, as gauged by the standards of his day, and he became one of the extensive landholders and influential citizens of the province of Nassau, his son Ludwig having well upheld the honors of the name as one of the prosperous agriculturists and honored citizens of Nassau. Of his eight children Henry, of this review, figures as the founder of the American branch of this sterling family, but it may be noted that at a later period another son, William, likewise came to the United States and established his home in Chicago.

In the excellent schools of his native place Henry Roos received his early educational discipline, and as a youth he entered upon a thorough apprenticeship to the trade of iron founder, his service continuing for a period of five years, within which he became an expert in this line of industry. Thereafter he was called upon to devote the regulation three years to service in the German army. After the conclusion of his military career Mr. Roos continued the work of his trade in his native city until 1879, when he came to America and established his home in Chicago, his business career since that time being sufficiently outlined in the foregoing article.

Mr. Roos is affiliated with the Masonic fraternity, and he is an earnest and valued member of the celebrated Moody church in Chicago, of which he has been an influential supporter and worker for a period of nearly twenty years.

Henry W. Roos, eldest son of Henry Roos, was born in 1883 and is indebted to the Chicago public schools for his early educational discipline. Under the punctilious direction of his father he learned all details of the foundry business, and since 1904 he has been secretary of the Henry Roos Foundry Company,—an efficient factor in the direction of the practical and executive phases of the substantial enterprise. He is affiliated with the Masonic fraternity.

THE INTERNATIONAL STAMPING COMPANY

An industrial enterprise of distinctive magnitude is that controlled by this progressive corporation, the modern manufacturing plant of which is established

HENRY ROOS

at 400 North Leavitt street, at the corner of Kinzie street. In this large industrial plant is conducted a general metal-shearing, stamping, rolling and electric-welding business, but the enterprise, which had a most modest inception, has become most important through the manufacturing of special and high-grade accessories for automobiles, motorcycles and bicycles.

In the basement of his home, then established at 1339 Carroll avenue, Walter R. Green, now president of the International Stamping Company, initiated the manufacturing of a garment-hanger of his own invention. The device was one of such unmistakable value that he disposed of the hangers as rapidly as he could manufacture them under the meager facilities and limited capital avail-

able. The products were sold the first year to Sears, Roebuck & Company and other leading mail-order houses, and the business for that year did not aggregate one thousand dollars. For four years Mr. Green bravely, and with unfaltering confidence and determination, continued his little manufacturing business virtually alone, and he gradually expanded the business by manufacturing other small invented devices produced by him. His next invention was an improved bicycle chain-guard, but as he had no machinery to permit him to manufacture the same in an individual way he had the work done by other manufacturers, under his personal supervision. This chain-guard met with most favorable reception and was soon adopted by most of the leading bicycle manufacturers of the United States. Later Mr. Green improved this original device by the invention and perfecting of a full chain-guard, covering both front and rear sprockets and the entire intervening portion of the chain. It is interesting to note that at the present time the company of which Mr. Green is the executive

head manufactures the same Perfection adjustable chain-guard and Standard one-piece chain-guards as originally designed.

With the expansion of his little manufacturing business Mr. Green finally secured larger accommodations. On Colorado avenue he leased a room that afforded one thousand square feet of floor space, and there he continued operations four years. During this period he continued to do all the work of his shop in an individual way, without even one assistant, his first machine for the facilitating of his manufacturing having been a small one which he himself operated by means of an electric motor of one-fourth horse power. In 1908 Mr. Green rented a portion of the second floor of a building at 138 South Clinton street, and here, with an available floor space of two thousand square feet and with a force of seven employes, he began the manufacturing of his various inventions upon a larger scale and under far more favorable conditions. His annual business now reached an average aggregate of six thousand dollars, and within sixteen months it became imperative to obtain larger quarters for the factory. Accordingly, there was effected the lease of the third floor of an industrial building at 1852 West Austin avenue, where requisition was made for ten thousand square feet of floor space and where the force of employes was increased to an average of about twenty. The next invention of Mr. Green was a steel bicycle mud-guard, and the same was adapted also for use on motorcycles. This device, made of steel, proved most popular and from the time it was placed on the market the demand for the same became large and appreciative. Mr. Green originated also the drop-side mud-guards, for bicycles and motorcycles, and on the same he received letters patent April 27, 1915.

Eighteen months after he established his factory at 1852 West Austin avenue Mr. Green found it necessary to add another floor to his accommodations and to increase his corps of employes to forty persons. In 1915 removal was made to the present large and well equipped plant,—a modern, daylight factory building of two stories, and here the International Stamping Company, organized by Mr. Green and incorporated in 1903, with a capital stock of twenty-five hundred dollars, now utilizes thirty-eight thousand square feet of floor space, while a force of seventy-five employes is retained in the factory. Mr. Green has been the president of the company from the time of its incorporation and his wife, Mrs. Ella Green, is his effective coadjutor, in the office of vice-president. The business of the company for the year 1916 aggregated two hundred thousand dollars, and that for 1917 is certain to show a very appreciable increase. This company has been a recognized leader in the origination and production of mud-guards for the bicycle and motorcycle, and the cradle type of tire carriers for the automobile and the output of the factory to-day includes many different products of unquestioned superiority, including the Victor automobile tire-carriers, with a special type for use on the Ford automobiles, and providing for the carrying of the tail-light lamp and license number within the periphery of the carrier, this being a device patented by Mr. Green; the Duplex tire-carriers, for any car and made to carry two tires, a similar device, known as the Simplex, providing place for only one tire. In August, 1917, they began the manufacture of a new patent Two-Three Tire Carrier, the only auxiliary on the market. These tire carriers, enable the motorist to carry all the extra tires desired, as a regular proposition or for special trips only. Assuming you have

provisions for one extra tire, this carrier rests on, and is supported by tire No. 1, it in turn will support tire No. 2 and No. 2 will support another carrier for tire No. 3, etc. Thus, as many tires as desired may be carried, all strapped to tire No. 1.

The construction of these carriers is such that they may be disassembled and packed away in comparatively small space.

The cradle sections fit about one quarter of the circumference of tires. The wide suspension bar is provided with a series of holes to receive the two narrower bars, thus allowing adjustment for any size tires. It fits any car with provisions to carry one extra tire, nothing about it to deface your car or tire. Just simply hook it on to the first extra tire. Steel tool and battery boxes for automobiles; metal tool boxes for bicycles and motorcycles; the various improved types of Green mud guards for bicycles and motorcycles, together with attachments and fittings for the same; the Climax luggage-carrier for bicycles and motorcycles, with varied accessories for this type of machines and for automobiles. The trade of the company is firmly established and rests upon the basis of superiority of products and efficiency of service. Through its president it has membership representation in the Illinois Manufacturers' Association. Of Mr. Green more specific mention is made in following paragraphs, and he is to be honored for the admirable achievement that has brought to him status as one of the representative manufacturers of the present generation in Chicago.

WALTER R. GREEN

Walter R. Green, founder and president of the International Stamping Company, extensive record of which is given in the preceding article, was born in England, on the 22d of October, 1858, and is a son of James and Caroline (Millington) Green. He received in the schools of his native land his preliminary education and was a lad of thirteen years at the time when, in 1872, he came with his parents to the United States, his father becoming a pioneer in the lumber business in Utah, where the family home was established. The subject of this review attended school for a time in Utah, and his first practical experience in business was gained by serving as a general utility boy in the general store of Walker Brothers, in Salt Lake City. With this concern he remained six years, and at the age of twenty years he was given charge of a general store at Bingham, Utah, where he remained thus engaged for two years. With his savings he then engaged in the conducting of a roller-skating rink, at the time when this sport was in high popularity, and later he became salesman for a patented carpet-stretching and self-tacking devices. He gave his attention to this line of occupation for a period of three years, during which he traveled extensively through Utah, Montana and Idaho. He had natural mechanical genius, and when he was a boy of but eight years he showed this by manufacturing a substantial and well constructed wagon from such material as he had at hand. Mr. Green neglected no opportunity to add to his knowledge of mechanics or to indulge his taste for experimentation and invention. In 1900 he established his residence in Chicago, and here his first invention was an aluminum lining for

stove-ovens, the superiority of the device, especially in furnishing reflective light in the oven, made the product one of distinct superiority. After continuing his experimentation several months he organized the Aluminum Bronze & Varnish Company, and the product, representing the process he had invented, was sold to stove manufacturers in Chicago and other places in the middle west. As Mr. Green had not patented his invention he was not in a position to protect the same against infringement, and the result was that his company was literally "frozen out" of business. The idea thus conceived by him in the making

W. R. Green

of a lining for ovens is now represented in a successful enterprise controlled by others, for the process is in common use. In 1902 Mr. Green began the manufacturing of his improved garment-hanger, in the basement of his home, and of his advancement from that time onward the preceding article gives adequate record. It may be said further, as supplemental to the foregoing context, that of the Green mud-guards for bicycles and motorcycles more than five hundred thousand were sold in the year 1916, and that for the other products of the factory the demand has been equally appreciable. All the special machinery utilized in the manufacturing plant of the company was designed and constructed in the factory, and the concern is known as one of the largest of its kind in the world. He takes loyal interest in public and civic affairs and is a stalwart in the camp of the republican party.

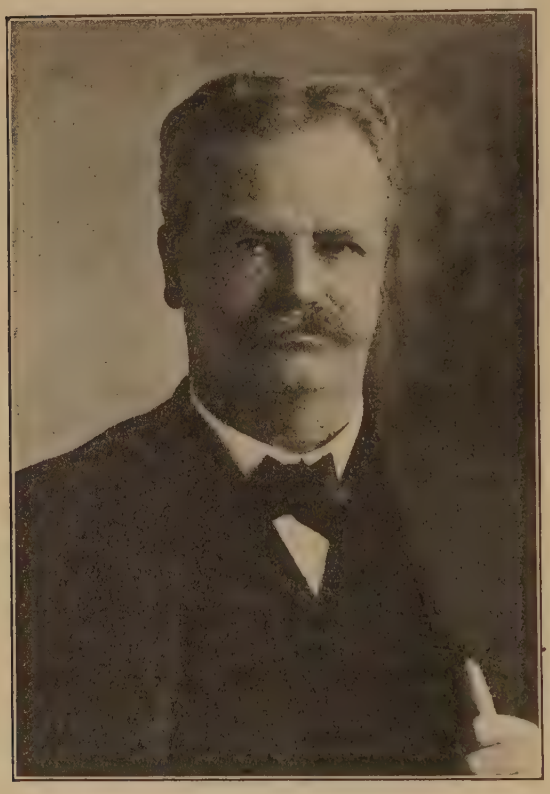
October 19, 1886, recorded the marriage of Mr. Green to Miss Annie Porter, of Salt Lake City, and of this first marriage the two children are Walter E., who is shipping clerk in his father's factory, and Albert Henry, who resides in Salt Lake City. The second marriage of Mr. Green occurred July 5, 1910, at Buffalo, New York, where he wedded Miss Ella Hall, a native of Pennsylvania. Mrs. Green takes a personal concern in the business of the International Stamping Company, of which she is vice-president, and she has given to the president, her husband, much valuable assistance in connection with his business affairs. No children have been born of this marriage.

THE CHICAGO STEEL TAPE COMPANY

In the manufacturing of all kinds of steel tape and special machinery as well as surveying instruments, this company has developed a substantial industrial enterprise that well merits consideration in this publication. The factory and offices of the company are established at 6229-33 Cottage Grove avenue, the business having been founded in 1891, by Lewis A. Nichols, who has been president of the company from the time of its incorporation, in 1893. The original headquarters were established at 1415 Cottage Grove avenue, where was occupied a floor space of only three hundred square feet and where operations were instituted upon a very modest scale, with only two employes. Careful and effective management brought about a consecutive expansion of the business and after its incorporation, in 1893, removal was made to more ample quarters, at the corner of Sixty-third street and Ingleside avenue. Here was placed in requisition a room twenty-five by seventy-five feet in dimensions and the corps of employes was increased to five. As previously noted, Lewis A. Nichols, the founder of the business, has been its executive head from the beginning, and Mrs. Carrie W. Nichols has held the office of treasurer since the incorporation of the company. Miss Delia Gleason was the original secretary, but Levi M. Sawyer is now the secretary and general superintendent. Removal to present well equipped headquarters was made in 1907, and here a force of fifteen employes is retained. In addition to steel tape the company manufactures a great diversity of surveying instruments of the highest grade, and the annual business has now attained to an average aggregate of forty thousand dollars. Among the special products manufactured under patents controlled by the company may be mentioned the Eureka steel-tape repairer, which device is extensively used by civil engineers; the Zig-zag folding machine, which automatically and accurately effects the accordian-folding of paper of any desired width and with length limited only by that of the roll of paper, this being, so far as known to the company, the only machine of the kind in the world. The special policy of the company is to manufacture original devices only and this policy has thus far avoided the taking up of any invention previously manufactured and placed on sale. The mechanical facilities of the plant are of the best type throughout and the efficiency of service is the basis on which the prosperous enterprise has been built up. The Chicago Steel Tape Company are members of the Illinois Manufacturers' Association.

LEWIS A. NICHOLS

Lewis A. Nichols, president of the company mentioned above, was born at Florence, Italy, of American parentage, on the 26th of August, 1851, and was about six years old at the time of the return of his parents to the United States, in 1857. He received the best of educational advantages in his youth, at Amherst, Massachusetts, and those of the Massachusetts State Agricultural College, in which he completed a thorough technical course and was graduated as a civil engineer, in 1871. In the same year he entered the employ of the Central Massachusetts Railway Company, and within six months his ability led to his being chosen to supervise the construction of twenty-five miles of the line,—a work which he successfully completed, though he had not at the time attained to his legal majority. At Worcester, Massachusetts, he had in the meanwhile had occasion to notice great coils of flat wire utilized in the manufacturing of old-time hoop-skirts, and incidentally he became impressed with the feasibility of using such flat wire in place of the Gunther chain commonly employed in civil-engineering operations. A strand of the wire was procured by him and in the connection was soon designed a practical steel tape,—the same being the prototype of the Babbitt steel tape that has proved of inestimable value in surveying and other engineering work.



LEWIS A. NICHOLS

Mr. Nichols continued his active association with railway construction work about forty years, rose to a place of definite distinction in his profession and was identified with numerous important enginering projects. While at LaSalle, Illinois he saw, in the plant of the Western Clock Works, the spring steel used for the clock-springs, and his inventive talent again came into evidence, since from the suggestion thus offered he developed what is known as the Chicago steel tape, the same being now utilized by civil engineers and general surveyors in all parts of the world. He has made other valuable contributions to the work of his profession and in his present manufacturing enterprise primary attention is given to the producing of surveying instruments and enginering devices of recognized value. Mr. Nichols is a member of the Western Society of Engineers,

the American Society of Civil Engineers, the Illinois Engineering Association and a member of the Woodlawn Park Lodge.

W. P. NELSON COMPANY

It is eminently gratifying to accord in this publication specific recognition of this company, which figures as one of the oldest and most important concerns of its kind in Chicago, as is evident when it is stated that the business of the company was founded more than sixty years ago. The company maintains its handsomely appointed display and sales rooms at 614 South Michigan avenue and it controls a large and representative business in the sale of the highest grade of furniture and draperies, wall papers, etc., with the best of facilities for doing artistic interior decoration, painting, etc. In the field of special furniture and draperies the concern is known for the production of original designs of the maximum art values and as the exponent of individuality in its sphere of operations. Nicholas J. Nelson, president of the company, is now the sole owner of the business and concerning him more specific mention will be made in a subjoining article.

The business conducted by the W. P. Nelson Company was founded in 1856, by the late Thomas Nelson, who left a distinct and noble impress upon the business and civic history of the western metropolis. Thomas Nelson was born in the village of Batterjohn, County Meath, ten miles from Dublin, Ireland, in 1827, and in his youth he received good educational advantages. In 1846 he immigrated to the United States and established his residence at Elizabethtown, Long Island, where he learned the trade of house and sign painting. In the early '50s Mr. Nelson came to Chicago, where he entered the employ of the firm of Heath & Milligan, leading painting contractors and founders of the business that eventually developed into the important paint manufacturing industry that still perpetuates the original firm title. With his firm Mr. Nelson continued his connection until 1856, when, as an expert at his trade, he initiated a modest contracting business in painting and interior decorating. His sterling character and progressive policies, as well as the excellence of service rendered, contributed to the building up of a substantial and prosperous business and to making him one of Chicago's leading representatives of this line of business. He took many important contracts, including those for painting the interiors of the old county court house, public school buildings and other large public buildings, and from the business which he thus founded more than half a century ago has been developed in a direct way the large and important enterprise now controlled by the W. P. Nelson Company, which maintains offices not only in Chicago but also in New York city.

In 1879 Thomas Nelson admitted his eldest son, William Paul Nelson, to partnership, and they continued to be thus associated in the conducting of the prosperous business until the death of the honored founder, Thomas Nelson, who was fifty-six years of age at the time of his demise, in 1882. In the old Holy Name Catholic church of Chicago was solemnized the marriage of Thomas Nelson to Miss Catherine Lamb, who likewise was born in Ireland and who was a child

at the time of the family emigration to America, her father, Nicholas Lamb, having become a pioneer citizen of Chicago and having been a native of the village of Durypatrick, County Meath, Ireland, born 1832 and died 1894. Thomas and Catherine (Lamb) Nelson became the parents of six children,—William P., Thomas E., Peter, John L., Elizabeth and Nicholas J., and the only daughter is now the wife of A. D. Plamondon, of Chicago.

In continuing the business established by their revered father the sons of Thomas Nelson finally effected, in 1893, the incorporation of the W. P. Nelson Company, the charter of which placed the capital stock at fifty thousand dollars, and the personnel of the official corps having been as here noted: William P. Nelson, president; John L. Nelson, vice-president; and Thomas E. Nelson, secretary and treasurer. In 1897 John L. and Thomas E. Nelson retired from the business and incidental to the reorganization thus entailed William P. Nelson continued as president while Nicholas J. Nelson, youngest of the brothers, became vice-president. The business was conducted by the company at 193 Wabash avenue until 1910, then removal was made to the present quarters, which are the finest in the country. On Wabash avenue the company occupied a three-story building, the two lower floors of which were equipped as show and sales rooms for wall paper, draperies, special furniture, etc., the corps of employes at this time numbering about one hundred persons. In 1905 William P. Nelson retired from the company and Nicholas J. Nelson succeeded to the presidency and sole control of the business. He assumed also the office of treasurer and his wife, Mrs. Katherine (Murphy) Nelson became secretary of the company. In 1910 the business headquarters were removed to 614 South Michigan avenue, where a five-story building is utilized for the company's factory, warehouse, offices and display rooms, the aggregate floor area thus in commission being seventeen thousand square feet, and the display rooms being recognized as among the most artistically appointed of all in Chicago,—a city whose reputation in this line is not excelled by any metropolitan center in the world. In 1904 the company established branch offices and show rooms in New York city, where the headquarters are at 209 West Thirty-third street. From a small beginning the enterprise has kept pace with the march of progress and development in the western metropolis, the annual business of the company now having attained to an average of more than six hundred thousand dollars and the force of employes averaging between five and six hundred. The business controlled by the New York branch is on a parity in scope and importance with that in Chicago, and the company has representative precedence in its field of operations in both of these cities. In New York the company has held executed contracts for the decoration of many important buildings, among which may be mentioned the Equitable Life, the Woolworth, the New Commodore, the Rector hotel, the New Amsterdam theater and all of the Chelsea piers, the first important contract assumed by the company in the national metropolis having been in the decorating of the New Amsterdam theater. In Chicago the company has long retained a distinctly representative clientele and has decorated many of the finest homes in the city. In 1910 the scope of the business was amplified by the addition of the department devoted to special furniture and draperies, and this has become one of the important and popular phases of the enterprise, the permanent business of the company now touching virtually all sections of the United States. At the

time of the erection of the buildings of the idyllic "White City" of the World's Columbian Expostion, in 1893, this company executed staff work for these ever memorable Chicago structures to a contract valuation of more than one million dollars.

NICHOLAS J. NELSON

Nicholas J. Nelson, president and treasurer of the W. P. Nelson Company, was born in Chicago on the 17th of July, 1867, and is the youngest of the children of the late Thomas and Catherine (Lamb) Nelson. His early educational discipline was acquired in the parochial and public schools of Chicago and this was supplemented by his attending the great Notre Dame University, South Bend, Indiana, and by a course in the Bryant & Stratton Business College in Chicago. At the age of fourteen years Nicholas Joseph Nelson initiated his practical business career by assuming the position of bookkeeper for the W. P. Dunn Printing Company, and later he took a clerical position in the great publishing establishment of Rand, McNally & Company. In 1883 he became bookkeeper for Sanford & Robinson, wholesale dealers in shirts, collars and cuffs, etc., and one year later he became a salesman for this concern, with which he continued his association until 1886, when he took a place with the glass establishment of George F. Kimball. In 1889 he entered the employ of Armour & Company with which great Chicago industrial corporation he continued one year, when he resigned a place that entailed his reception at a salary of two hundred dollars a month, to associate himself with the W. P. Nelson Company at the insignificant compensation of ten dollars a week. He had the prescience to discern that in this connection was offered a splendid opportunity for advancement, and he worked himself from the bottom upward until he had familiarized himself with all details of the business and had fortified himself for the executive office of vice-president, treasurer and general manager, of which he continued the incumbent until 1905, when he purchased the interests of his brothers, William P. and John L. and

N. J. Nelson

assumed full control of the extensive business that had been founded by their father in the pioneer period of Chicago's history. He has since continued as president and treasurer of the company, as noted in the preceding article, and he was also a director of the First National Bank of Wheaton, Illinois, in which attractive suburban city was formerly maintained the family home. Mr. Nelson is one of the active, influential and popular members of the Chicago Association of Commerce, of which he is a director, also President of the Decorating and Painting contractors and he takes the deepest interest in all things touching the civic and material welfare of his native city. He is independent in politics, is a member of the Royal League and is identified with the Chicago Athletic Association, the South Shore Country Club and the Chicago Golf Club. The family home since 1915 has been at 1020 Ardmore avenue, Chicago.

On the 23d of January, 1894, was solemnized the marriage of Mr. Nelson to Miss Katherine Murphy, daughter of Daniel and the late Katherine (Hurley) Murphy, honored pioneers of Chicago, and concerning the children of this union the following brief data are consistently entered: Paul D., who was born November 8, 1894, was graduated in Princeton University as a member of the class of 1917 and with the degree of Bachelor of Arts: as an undergraduate at this historic institution he was president of the Triangle Club in 1916, besides having served as president of the Colonial Club, leader in the Glee Club. At the university Paul D. Nelson took a special course in aviation in preparation for service in the great European war, and he was one of the ten honor men of Princeton who sailed for England September 25, 1917, to take place as members of the United States aviation corps in the terrific war service, his rank being that of sergeant major in this important service. William Thomas, the second son, was born January 15th, 1896, and while tutoring at Princeton he likewise enlisted in the United States aviation corps. Nicholas J., Jr., who was born July 15, 1899, is a student at Lake Forest University; Katherine M. was born September 14, 1905; John L. was born September 29, 1909; and June Dorothy was born January 27, 1914.

OSCAR W. HEDSTROM

Incidental to the furthering of the great and widely diversified industrial activities of Chicago there is constant and imperative demand for the interposition of the skilled and reliable pattern and model maker, and he whose name introduces this article has built up a substantial and representative business in this important subsidiary field of enterprise, his well equipped pattern and model works being established at 558-62 West Randolph street. In the year 1907 Mr. Hedstrom became associated with Adolph L. Remer in founding the business of which he is now the sole owner. The firm of Remer & Hedstrom began operations in a modest factory at 16-18 North Jefferson street, and operations were continued at that location until 1916, in May of which year the firm removed its plant to the present plant, which is installed in a modern industrial building and which utilizes three thousand square feet of floor space. Under the original firm name the enterprise was successfully continued until April 1, 1917, when Mr. Hedstrom purchased his partner's interest and assumed full

control of the business, which he has since continued in an individual way and with unequivocal success. His factory has the most modern mechanical equipment and accessories for the production of high-grade patterns in both wood and metal and for all kinds of industrial purposes. Though the primary function of the establishment is the production of such models and patterns careful attention is given also to experimental model-making and development work along this line. From this department of the establishment has been given a valuable contribution to the successful founding and development of a number of Chicago's important industrial enterprises of later years. The general efficiency of the service of the Hedstrom factory is assured by the personnel of its patrons, and among the many representative concerns that have availed themselves fully of the service of the institution may be noted the following named: International Harvester Company, Foote Brothers Gear & Machine Company, Walker Vehicle Company, Burdette Manufacturing Company, Illinois Tool Works and the American Clay Machinery Company. In the Hedstrom factory employment is given to an average force of fifteen expert workmen, and punctilious care is given to every detail of production, so that the output in both a general and specific sense represents the maximum of perfection. Mr. Hedstrom is a member of the Patternmakers' Association and has served since 1907 as a member of the board of directors of Chicago Patternmakers Employers' Association.

OSCAR W. HEDSTROM

Oscar W. Hedstrom was born at Vermland, Sweden, on the 5th of February, 1877, and was about one year old at the time when the family home was established in Chicago. Here he received his early educational discipline in the public schools and as a youth he began his thorough apprenticeship to the trade of patternmaker, in which he became an expert. He has continuously been identified with the patternmaking industry during the succeeding years and in his independent operations has gained recognition not only as a technical expert but also as a progressive and reliable business man of distinct executive ability. In the Masonic fraternity he is affiliated with Wright's Grove Lodge, Ancient Free & Accepted Masons; Lincoln Park Chapter, No. 177, Royal Arch

Masons; and Chicago Council, Royal & Select Masters, of which he is serving as master in 1917-18.

HENRY T. ADAMS MANUFACTURING COMPANY

This progressive Chicago corporation has gained international reputation as the patentee and manufacturer of the Adams ring and other specialties that are extensively used by manufacturers of loose-leaf binders and book covers. The business was organized in 1903, by Henry T. Adams, the inventor and patentee of the now celebrated Adams ring, which has become an almost universal requisite in connection with the modern system of loose-leaf ledgers and other books of record and accountancy, the original patent on the invention having been granted to Mr. Adams under date of February 4, 1902, and subsequent patents having been issued on improvements and diversified forms of the device. In initiating the manufacturing of his invention Mr. Adams obtained the requisite capitalistic co-operation and in 1916 provision was made for the proper handling of the constantly expanding business by erecting the modern one-story brick building that constitutes the present manufacturing plant of the Henry T. Adams Manufacturing Company. This structure replaced the former two-story building which had been occupied by the concern at the beginning of operations, and the new building was specially designed and equipped for the purposes to which it was to be applied. The plant is effectively located at 6796-98 South Chicago avenue, the general dimensions being twenty-four by seventy feet. The plant is one-story in height, with light on all three sides, and the company owns sufficient vacant ground to permit the enlargement of the factory in accord with future demands. In the erection and equipment of the new factory no expense was spared, and all machinery and accessories are of the best modern type, including several special machines designed and constructed for the facile turning out of specific parts of the work, these machines representing the result of prolonged experimentations and tests on the part of Mr. Adams. The proprietor of this important business has recently installed in his factory special machinery for the manufacturing of loose-leaf binders of his own design and invention, and the unequivocally favorable reception that has met the introduction of the Adams improved binders and file covers gives distinct assurance that the same will come into very extensive use in connection with all manner of commercial and other business enterprises. For several years past the average output of the Adams rings has been in excess of a million each year, and since the employment of the improved productive machinery devised by Mr. Adams the capacity of the plant has been so increased that it is now possible to turn out fifty-two thousand of the finished rings daily. After long and insistent importunities on the part of jobbing concerns both in America and foreign lands, Mr. Adams has recently made adaptation of his loose-leaf rings to make them available as key rings, their unquestioned superiority over other types being such that thousands are being sold daily and they have become a recognized standard for use as one of the indispensable appurtenances of the pockets of men in all walks of life. This expansion of the functions of his rings has enabled Mr. Adams to offer a product of virtually universal utility, and in equal degree has been extended the com-

mercial function of the industrial enterprise of which he is the energetic and progressive head.

In the plant of the Henry T. Adams Manufacturing Company all machinery is operated by electric power and with the establishing of the department devoted to the manufacturing of the Adams improved binders and file covers the corps of employes was greatly augmented, the average force of operatives in the factory being about six to ten in number at the time of this writing, in the winter of 1917-18.

HENRY T. ADAMS

Henry T. Adams, sole owner of the important business of which mention is made in the foregoing context, has won for himself secure vantage-ground and pronounced success in connection with the industrial activities of the western metropolis, and he is known and honored as a vigorous and progressive business man and a public-spirited citizen. Mr. Adams was born at Mulheim-am-Rhein, Germany, on the 15th of August, 1877, and he was a lad of nearly seven years at the time of the family immigration to the United States, his parents establishing their home in Chicago, where he was reared to adult age and received the advantages of the public school. He profited fully by the advantages thus afforded him and his alert and receptive mentality has been to him a reinforcing element of advancement and success in the world of business. After leaving school Mr. Adams entered the employ of the Chicago University Press, and while thus engaged his attention was drawn to the imperative demand for a loose-leaf binder to take the place of the awkward and cumbersome device that had been used for this purpose,—one in which a shoestring constituted the principal binding accessory. He began a series of careful and prolonged experimentations in an attempt to provide the requisite device for the purpose noted, and no insignificant success was that which attended his efforts when he perfected the now celebrated loose-leaf binding ring that bears his name. In the initial stages he had his invention manu-

HENRY T. ADAMS

factured under contract arrangement, but finally he found it possible to take up in an independent way the production of his rings, as noted in the preceding article, besides which his inventive genius has since been brought to bear in the expanding of the productive functions of the business of which he is the owner.

Mr. Adams is a man of superabundant vitality and enthusiasm and finds his chief recreation through indulgence in sports afield and afloat. He is an active and popular member of a number of representative organizations of sportsmen, including the Senachwine Hunting Club, which has its preserve on the Illinois river, and he is a genuine enthusiast in hunting, fishing and target practice. He is a charter member of the Illinois Casting Club, holds membership in the Chicago Motor Club, and is affiliated with Masonic fraternities.

THE GREAT NORTHERN REFINING COMPANY

In the marketing of petroleum products this corporation has become one of the strongest and most important represented in Chicago, and it has developed a specially large volume of business in the marketing of oils for railroad and other industrial uses, the extensive trade in this line extending into the most diverse sections of the Union, with the substantial and appreciative supporting patronage of leading railway and industrial corporations. The company also handles, in barrel and tank-car lots all grades of defined petroleum products, as well as the heavier flux, fuel and gas oils. In the Chicago territory the company maintains at various advantageous points wholesale distributing stations for the direct marketing of gasoline to the consumers in quantities less than tank-car lots, and it has the best of facilities for the prompt delivery of oils and gasoline in the modern tank-cars and in any amount desired. It will thus be seen that the concern has an important place in connection with the general industrial activities of Chicago and is fully entitled to consideration in this publication.

The Great Northern Refining Company was organized and incorporated in 1917, by John E. Shatford and associates, and the primary function of the new corporation was the marketing of the output of two refineries in the oil fields of Oklahoma and one refinery in Kansas, the daily capacity of the three refineries being for the output of six thousand barrels per day of the various refined products. The original executives of the company were John E. Shatford, president; and William P. Holbrook, secretary and treasurer. The general offices were established in the Transportation Building, at the southwest corner of Dearborn and Harrison street, but January, 1918, their removal was made to the fifteenth floor of the Lytton Building. The officers of the company continue the same as at the initiation of the business and the company has now amplified its functions by operating in a direct way a large and modern refinery, at Joliet, Illinois. This refining plant was purchased by the company in May, 1917, and the same occupies a tract of twelve acres, with direct trackage connections with the Chicago & Alton and the Elgin, Joliet & Eastern Railroads, so that the best of transportation facilities are controlled. Since taking possession of this well established refinery the company has expended more than fifty thousand dollars in additional equipment for and other improvements upon the property, and it now has a

REFINERY OF THE GREAT NORTHERN REFINING COMPANY, JOLIET, ILLINOIS

capacity for the output of fifteen hundred barrels of refined oils daily, the products including the various grades of gasoline and naptha, gas oils, fuel oils, etc. In conjunction with the extensive Joliet plant the company plans to erect a fully equipped wax and freezer plant for the manufacturing of lubricating distillates and other byproducts from the crude petroleum base. These brief statements indicate sufficiently for the purpose of this publication the relative priority and importance of the Great Northern Refining Company, the affairs of which are in the control of executives of broad experience and distinctive progressiveness, further reference to the officers of the company being made in appending paragraphs.

JOHN E. SHATFORD

John E. Shatford, president of the corporation mentioned in the preceding review, has become well and favorably known to the oil men and oil trade of the country as an able executive who is thoroughly well fortified in both the producing and sales departments of the petroleum industry, the importance of which has been greatly accentuated since the United States became involved in the great European war, as petroleum products play a large part in the varied activities of modern warfare. Mr. Shatford was for six years associated with the Barnett Oil & Gas Company, and for two years he was assistant superintendent of its refinery, at Blue Island, Illinois. He then became general sales manager for the company, and after four years of effective administration in this office he resigned the same to organize the company of which he has since been the president. The Great Northern Refining Company is represented in membership in the Independent Oil Men's Association, the Petroleum Club of Chicago and the Chicago Association of Commerce.

WILLIAM P. HOLBROOK

William P. Holbrook, secretary and treasurer of the Great Northern Refining Company has had wide and intimate experience in connection with the varied phases of commercial industry and prior to forming his present alliance he had been connected with the Western Electric Company and, later, with Darling & Company, of Chicago, in which latter association he held the position of purchasing agent for the fertilizer department for three years. He resigned this position at the time he became concerned with the organization of the corporation of which he has since been secretary and treasurer and in the development of which he has been the able and valued coadjutor of the president of the company.

THE JULIUS MARQUARDT PAPER BOX COMPANY

The corporation, one of the strongest and most thoroughly representative concerns in its line to be found in Chicago, was organized by the late Julius Mar-

quardt, who left a definite and worthy impress upon the industrial history of his native city. Mr. Marquardt was born in Chicago in the year 1871, a son of William and Ernestine (Stroh) Marquardt. He acquired his early education in the Lutheran parochial schools and supplemented this by attending the night session of the public schools after he had initiated his activities in connection with business. He was but fifteen years of age when he began to provide for his own support, his first place of employment having been a chewing-gum factory. In this factory was a department devoted to the manufacture of the paper boxes in which the chewing-gum products were packed, and it was in this department that Mr. Marquardt virtually served a regular apprenticeship and became a skilled workman in the making of paper boxes. Eventually he was made foreman of the department and after continuing the incumbent of this position several years he purchased an interest in the business of the Albert Arnold Paper Box Company, the establishment of which was situated on Lake street, near Clinton street. The business at that time was one of modest order but the new firm of Arnold & Marquardt brought to bear such effective service and progressive policies that the business rapidly expanded in scope. To meet the increasing demands placed upon the establishment removal was finally made to more eligible quarters, on Monroe street, near Jefferson street. In 1898 the partnership was dissolved by the retirement of Mr. Marquardt, and the enterprise was continued in the same location by Mr. Arnold. Mr. Marquardt at this time opened a factory of his own, directly across the street from that of Mr. Arnold, and in establishing the independent enterprise he adopted the present title, the Julius Marquardt Paper Box Company. One year later he removed his factory to the old Kurz building, in which he took possession of the second floor. Within one year his business had so increased that he found it expedient to expand his facilities, and he accordingly leased another entire floor of the same building. In 1900 the plant, with the best of equipment, gave employment to a force of sixty persons and the concern had become an important factor in the local field of paper-box manufacturing. Careful and honorable methods and close application marked the entire business career of Mr. Marquardt, and he achieved substantial success as a manufacturer as well as a high reputation as a sterling citizen well worthy of the high esteem that was uniformly accorded to him. He continued as the active head of the business until his untimely death, on the 27th of May, 1902, when he was but thirty-one years of age.

On the 20th of August, 1893, was solemnized the marriage of Mr. Marquardt to Miss Mary Behles, who likewise was born and reared in Chicago, where her parents, Peter and Barbara (Kuhne) Behles, settled many years ago. Mr. and Mrs. Marquardt became the parents of three children, all of whom survive the father,—Willis J., Ethel and Clarence W.

Shortly after the death of Mr. Marquardt his widow assumed full control of the business which he had established, and under her direction the same was incorporated, with a capital stock of forty thousand dollars. She became secretary and treasurer of the company and her brother, Nicholas Behles, assumed the position of general manager. Under such administrative control the business was successfully continued until 1905, when Mrs. Marquardt became the wife of Daniel Farrell. Mr. Farrell is now the executive head of the business, of which he has the general management, as successor of Nicholas Behles who has been

since 1914 one of the stockholders and directors of the A. D. Shoup Paper Box Company. The well equipped factory of the Julius Marquardt Paper Box Company is established at 345 North Austin avenue.

DANIEL FARRELL

Daniel Farrell, president of the Julius Marquardt Paper Box Company, was born at Quincy, Illinois, on the 10th of September, 1874, and is a son of John and Mary (Dowling) Farrell, who established their home in Chicago in 1882 and who here passed the remainder of their lives, both having been devout communicants of the Catholic church.

Daniel Farrell

Daniel Farrell is indebted to the Catholic parochial schools for his early educational discipline, and he was about eight years of age at the time of the family removal to Chicago. At the age of sixteen he found employment as a clerk in the establishment of H. R. Eagle & Company, cigar and tobacco dealers, and within a short time he was placed in charge of the retail department of one of the stores conducted by the concern. Several years later Mr. Farrell severed his alliance with this well known company and accepted a more advantageous position, with the Clayton Cigar Company. He remained with this corporation, as one of its most successful and valued salesmen and managers, until the entire business was sold to the United States Cigar Company. With this latter corporation Mr. Farrell continued his effective activities until 1905, when he resigned his position to assume that of executive head of the Julius Marquardt Paper Box Company, in which he had previously purchased a financial interest. In his long association with the cigar business Mr. Farrell formed a specially wide acquaintanceship, and it may consistently be said that his circle of friends is limited only by that of his acquaintances. He is loyal and public-spirited in his civic attitude, a vigorous and resourceful business man, and in politics he is not constrained by partisan dictates but gives his support to the men and measures meeting the approval of his judgment. His religious faith is that

of the Catholic church. As previously noted, his marriage to the widow of Julius Marquardt was solemnized in 1905, and their attractive home is at 3825 West Adams street.

STAR TOOL & MANUFACTURING COMPANY

In its important field of industrial production this company has one of the best equipped and most efficiently organized plants in Chicago, the same being established at 4518-22 Lexington avenue. The company was incorporated under the laws of Illinois, in 1917, and the original capital stock was placed at ten thousand dollars, fully paid in. The founders and present officers of the company are as here designated: Edward A. Davids, president; Carl A. Warn, secretary; John Hessler, treasurer; B. Otto Sund, vice president; and Paul J. Simonsen, general office manager, purchasing agent, etc. The factory is in operation night and day, with a large force of skilled mechanics, all of them being experts in their respective departments of service and unexcelled in efficiency by similar operatives in any part of the Union. The officers of the vital and progressive new corporation are mechanics of long experience in responsible positions and in their independent industrial enterprise each is in charge of a special department of the well organized manufacturing plant, all work turned out being thus under the personal supervision of the principals of the company. The spirit of efficiency pervades the entire institution, none but the best of materials is utilized and the concern has never had a single rejection of any piece of work turned out, in which connection emphasis should be placed on the statement that the company has executed important and intricate work that has baffled the productive skill of other establishments of similar order. The mechanical equipment of the plant is of the very best modern type, including engine lathes of the Klusman, the Lodge & Shipley, the Monarch and the Sebastian makes; bench lathes of the most approved order; milling machines; No. 2 Cincinnati Universal grinders and surface grinders, complete with magnetic chucks; American gauge grinder; etc.; shapers; bench planer; drill presses; punch presses; screw presses; and a hardening plant; and a full assortment of small tools, measuring instruments and other high-grade accessories.

It may well be understood from the foregoing statements that this company has unexcelled facilities for the efficient designing and manufacturing of special and automatic machinery and machine parts for every conceivable industrial purpose, and the concern figures also as designers and makers of high-grade small tools, special tools, dies, jigs, gauges, fixtures, intricate scientific instruments, etc. The company manufactures on an extensive scale all manner of metal products for industrial application on a contract basis, and has contracts with a number of leading industrial concerns in Chicago and elsewhere. Here is assured unexcelled service in economical and efficient factory production. Among the representative clients for whom the company has executed important or intricate work may be mentioned the International Harvester Company, the Rost & Van Dervoort Engineering Company, R. & V. Wagner Ordnance Co., of East Moline, Illinois, besides which the well ordered factory has executed important ordnance contracts for the United States government, in connection with war activities, with other contracts is process of execution.

The company retains in its service a staff of expert designers and draftsmen and has the best of provisions for the hardening, tempering and annealing of metals. The officers of the company maintain personal supervision of pattern-making, casting and all other work which they assign to other concerns for production.

Since the executive officers of the Star Tool & Manufacturing Company are actively identified with the technical and manufacturing operations of their well equipped plant, a brief incidental record of the career of each may well be given as supplemental to this article.

Edward A. David as mentioned above was born in Chicago, where he was educated in the Chicago Public Schools and served an apprenticeship in the great works of the International Harvester Co., and later was assistant superintendent of same. He resigned from this position to associate with the Accurate Engineering Co as superintendent which position he left in 1917 to apply his time and experience to the Star Tool & Manufacturing Co as president.

Mr. David is affiliated with and a recognized member of the Masonic fraternity.

B. Otto Sund, was born in Stockholm, Sweden, and a graduate of the Stockholm Technical school where he served an apprenticeship. Mr. Sund had several years experience in Swedish ordnance plants and came to Chicago in 1907 and was employed by the Aurora Automatic Machinery Company, the Accurate Engineering Company and the Krasberg Mfg. Company, from which he resigned to assist in the organization of the Star Tool and Mfg. Co.

John Hessler was also born in Stockholm and availed himself of a course in and an apprenticeship with the Stockholm Technical School and had years of experience in the plant of the Lyth Instrument Company and Government and Navy work. Mr. Hessler came to Chicago in 1909, and entered the employ of the Illinois Tool Works and later with Markrum Co. and then he was in charge of the Inspection department of Krasberg Manufacturing Co., which position he resigned to organize this company.

Carl A. Warn was likewise born in Stockholm and received the benefit of the same schools of Technology as his associates. Mr. Warn has had years of experience in the ordnance in Sweden, Finland and Russia. He came to Chicago in 1909 and was employed in the works of the Aurora Automatic Machinery Company and later foreman of the Antomatic Engineering Company, from which he resigned to assist in the organization of the Star Tool & Manufacturing Company.

THE B. & K. ELECTRICAL MANUFACTURING CO.

Under the provisions of the laws of Illinois this company was organized and incorporated in June, 1917, with a capital stock of fifty thousand dollars and with officers as here noted: Charles H. Fox, president and treasurer; Willard H. Bell, vice-president and secretary; and Karl A. Pihl, general manager. The corporation was formed for the purpose of manufacturing the inventions of Bates and Kingsbury, who were granted a basic patent and a number of general patents on the electrical device known as the "B. & K. Flasher." In making provision

for active manufacturing the new corporation obtained its present eligible quarters, at 147-49 West Austin avenue, where it utilizes three thousand square feet of floor space in a modern industrial building and where employment is given to a score or more of skilled mechanics. Immediate success attended the introduction of the greatly superior flashlight invented by Bates & Kingsbury and the company has already extended its business into the most diverse sections of the United States. Prior to perfecting the present organization the principals of this company had been engaged in the manufacturing of tools, jigs, etc., and this department of production has been made an important part of the business as now conducted.

KARL A. PIHL

Karl A. Pihl is a stockholder and the general manager of the B. & K. Electrical Manufacturing Company and is known as a skilled machinist and engineer of broad experience. He was born in the fair old city of Stockholm, Sweden, on the 3d of June, 1891, his father being superintendent of an important manufacturing concern in that city. In the admirable schools of Stockholm Mr. Pihl received the best of youthful educational advantages and he remained in his native land until 1910, when he came to America and became a resident of Chicago. Here he fortified himself in technical and practical mechanical knowledge by taking an effective course in the Lewis Institute and also availing himself of the advantages of the Chicago Technical College. A little later he accepted a position as tool inspector for an eastern tool-manufacturing concern. He continued his services in this capacity until he initiated his independent career as a manufacturer in Chicago. He formed a partnership with Albert Johnson and engaged in the manufacturing of a special line of tools, with headquarters at 3817 Crawford avenue. He there continued his activities until he was importuned by the B. & K. Electrical Manufacturing Company to assume charge of the equipping of its factory and become general manager of the same. He

K. A. Pihl

responded to this overture and has been the aggressive and alert executive in charge of the manufacturing department of the enterprise, as well as a factor in the defining of the administrative and general commercial policies of the concern. He is affiliated with Blair Lodge, No. 393, Ancient Free & Accepted Masons; the First Swedish Lodge, No. 479, Independent Order of Odd Fellows; and is an active member of the Swedish Engineering Society.

JENSEN MACHINE COMPANY

The great industrial district of the western metropolis has within its province the well ordered manufacturing plant of this company, the same being established at the corner of Kensington and Burlington avenues in the suburb of La Grange. The company has the best of facilities for the manufacturing of tools and dies for sheet-metal work of all kinds, and also has high reputation in the manufacturing of the best grade of tools utilized in sheet-metal work, as well as small tools, special tools, dies, jigs, gauges, fixtures, drawing dies, etc., for use in machine shop and press-room.

The Jensen Machine Company was organized in October, 1915, by William Jensen, who for this purpose had resigned his position as foreman, of the stamping department and tool rooms of the Aluminum Products Company, of La Grange, —the largest spinners and stampers of aluminum metal to be found in the state of Illinois. Upon organizing his independent industrial enterprise Mr. Jensen forthwith instituted the erection of a large brick and steel building, of mill construction, and in this model industrial building was installed the most modern equipment for the handling of the multifarious productive work that has since gained to the institution its high reputation. Mr. Jensen has remained the executive head of the business and under his able supervision it has shown a consecutive growth and expansion. The company's plant, with its excellent equipment of machinery, tools and general accessories, together with an adequate force of skilled workmen, is prepared to execute with utmost expedition and efficiency all kinds of work in its field of operations. The drafting department of the establishment has a corps of experts and thus the concern has the best of facilities for the designing and construction of special machinery, automatic machinery, machine parts, etc. From the time of initiating operations the company has handled for the Aluminum Products Company the manufacturing of all of its tools, dies, jigs, etc. The company has also the most approved facilities for the hardening, tempering and annealing of metals, and this department of the business has the personal supervision of Mr. Jensen, who has had many years of practical experience in technical work of this kind.

William Jensen, founder and executive head of the Jensen Machine Company, was born in the fair old city of Copenhagen, Denmark, and was about four years of age when he accompanied his parents on their immigration to the United States, the family home having been established in Chicago. Here he amplified his education by a thorough course of technical study and practical work in the Armour Institute, and since that time he has been actively associated with the metal trades,—more specifically with the manufacture of tools, dies,

etc. He has made a specialty of manufacturing tools and dies for metal-stamping requirements, and in this special department of industrial enterprise he is a recognized expert and authority. Of his broad and varied experience an idea is conveyed by giving a list of various industrial concerns with which he was employed prior to establishing his independent industrial enterprise, and in this list the period of his connection with each respective concern is likewise designated; Menominee Electrical Manufacturing Company, Menominee, Michigan, eighteen months; Adams & Westlake Company, Chicago, two years; National Stamping Company, Milwaukee, Wisconsin, eighteen months; Gender, Paeschke & Frey Company, Milwaukee, three years; Maple City Manufacturing Company, Monmouth, Illinois, one year; Cassady-Fairbanks Manufacturing Company, Chicago, one year; Aluminum Products Company, La Grange, Illinois, three years.

Adjoining its modern building the Jensen Machine Company owns ample ground to make possible the enlargement of the plant, and so large is the volume of business that the company contemplates making this addition to the factory within the near future. Mr. Jensen is thoroughly informed in technical details, manufacturing costs, and estimating in his important field of industrial enterprise and is at all times prepared to give prompt attention to letters of advice or inquiry on the part of manufacturers in any part of the Union.

THE CONCRETE ART WORKS

Under this consistent title there is conducted, at 4447 Ravenswood avenue, one of the unique and important industrial enterprises of the western metropolis. The concern manufactures the celebrated "Brascotite" electric-light fixtures, which products are distributed by the St. Louis Brass Mfg. Co. These fixtures are produced by casting a special, fine composition in mold designs and then plating the surface with brass, bronze or copper, as desired, the result being a most attractive and virtually indestructible product.

This well ordered Chicago concern has filled many contracts of noteworthy orders in the producing of special art concrete work for statues, and similar products for electric-lighting fixtures, electric fountains, street electric-light standards, and similar devices. Among the more important commissions and contracts effectively handled by the Concrete Art Works may be noted the following. Memorial concrete basin as a part of the memorial erected to Captain Sidney Smith and executed for the Texas State Rail Association, Dallas, Texas, this product weighing fifty-four tons; composition lighting fixtures of the Oklahoma state capitol; the ornamental concrete work of the Pelouze building, Chicago; architectural ornaments for the residence of Julius Schwill, of Chicago, and also the beautiful residence of Mrs. Jacob W. Loeb, of this city, comprising of lawn furniture, fountain, settees, balustrades, etc., for the residence grounds of Mrs. Florence Scott, at Glencoe, Ill., one of the most beautiful suburban districts of Chicago; memorial bench-fountain, etc., of the Lowell Hoit memorial on the grounds of the high school at Ripon, Wisconsin; wall fountains for the residence of C. B. Smith, Chicago; lighting pedestals and "safety isles"

for the city of Kenilworth and erected in Sheridan road, and similar work for the Kenilworth Improvement Association.

The Concrete Art Works manufactures galvano-composition plated lighting fixtures of all kinds, from any design and in any desired size; architectural ornamental work of any size or design, in consonance with specifications given by architects, art commissions, etc., or those involved in the special designs made by the staff of the manufacturing concern itself. In this well ordered Chicago plant has been executed a large amount of contract manufacturing for the Beardslee Chandelier Manufacturing Company, of Chicago, and also for the St. Louis Brass Mfg. Co., St. Louis, Mo., as noted in the opening paragraph of this article. The concern has executed also designs in ornamental lawn furniture for Marshall Field & Company, retail, an equally effective service has been given in the taking of death masks or masks of living persons, for pedestal busts, statues, etc. Alvin A. Schmidt, the founder of this business, has perfected a process of plating, in any desired metal finish, articles of every description, including fruits and other of nature's products, besides giving similar treatment in the production of modeled replicas, for memorial purposes, for souvenirs, etc. The plant is fully equipped in all departments for the effective handling of modeling and sculptural work, for metal plating, and for the general service in both laboratory and manufacturing departments.

The business of the Concrete Art Works was established February 20, 1910, at its present location, and the founder of the enterprise, Alvin A. Schmidt, has continued as its active head. The establishment utilizes ten thousand square feet of space and employs skilled sculptors, besides an average force of about ten additional workmen, all thoroughly skilled in their respective departments of service.

Alvin A. Schmidt, founder and executive head of the business described in the preceding paragraphs, was born in Chicago, on the 29th of March, 1872, and is the son of Alphonse Moulton Schmidt. He was afforded the advantages of the public schools of his native city and early gave distinctive evidence of special artistic talent. Finally he obtained a position in the Chicago studio of Guiseppi Ferrara, one of the foremost wood-carvers of his generation in America, and under the direction of this distinguished artist Mr. Schmidt continued his study and practical work from 1892 until about the close of the year 1894. Thereafter he fortified himself still further by being successively an attache in the studios of Phillip Martin and Louis Weber, both noted sculptors. Under such favorable auspices Mr. Schmidt perfected himself as a modelmaker, and finally he engaged in independent art and business enterprise by establishing his present business, as noted in the preceding article. He holds membership in the Chicago Art Institute, and in a fraternal way he is affiliated with the Knights of the Maccabees.

NATIONAL LAUNDRY MACHINERY COMPANY

"Aladdin's lamp rediscovered at Twenty-second street and Union avenue!" What a great newspaper headline it would make, but alas! Anyone who knows Chicago would never select that location for the home of genii or of romance,

but, nevertheless if it was not Aladdin's own magic lamp that Henry C. Kiehl found amid the smoke and grime of this very busy manufacturing center, then we must ascribe the wonderful results obtained by this young business man to his own sagacity, tireless energy and native ability.

The author and the poet often feel that business is devoid of what they call "atmosphere" but in 1903 Kenzie and Dearborn streets were redolent with the odor of the "seven seas" for here might be found merchandise from, and for, every quarter of the globe. Here too, Aladdin's successor made his first business venture in a deserted loft at this now famous old corner.

Chicago then not only had its Chinatown with its hundreds of Orientals and small laundries toiling day and night to build up the laundry business, while competition with the larger establishments in this industry was growing keener every day. This was the day of the small hand- and steam-laundry, and yet even then, the industrious owners of these small establishments found it difficult with limited capital to compete with the larger steam laundries. Seven mammoth manufacturing concerns then controlled the output of laundry machinery throughout the United States, and they were all too busy to solicit the business of these "little fellows," most of whom were merchants with little or no capital and less credit.

Mr. Kiehl who had been a representative salesman for a laundry-supply company knew most of these merchants, and through coming in contact with their problems, he conceived the idea that a large business might be built up by catering to their needs.

The failure of the house by which he had been employed supplied the opportunity for putting into practical operation the plans he had so carefully nourished, and so in an old loft on Kenzie street, in 1903 was started the business that from a capital of a few hundred dollars drawn from his savings account, has grown into a corporation that is now doing a business of nearly two hundred thousand dollars a year.

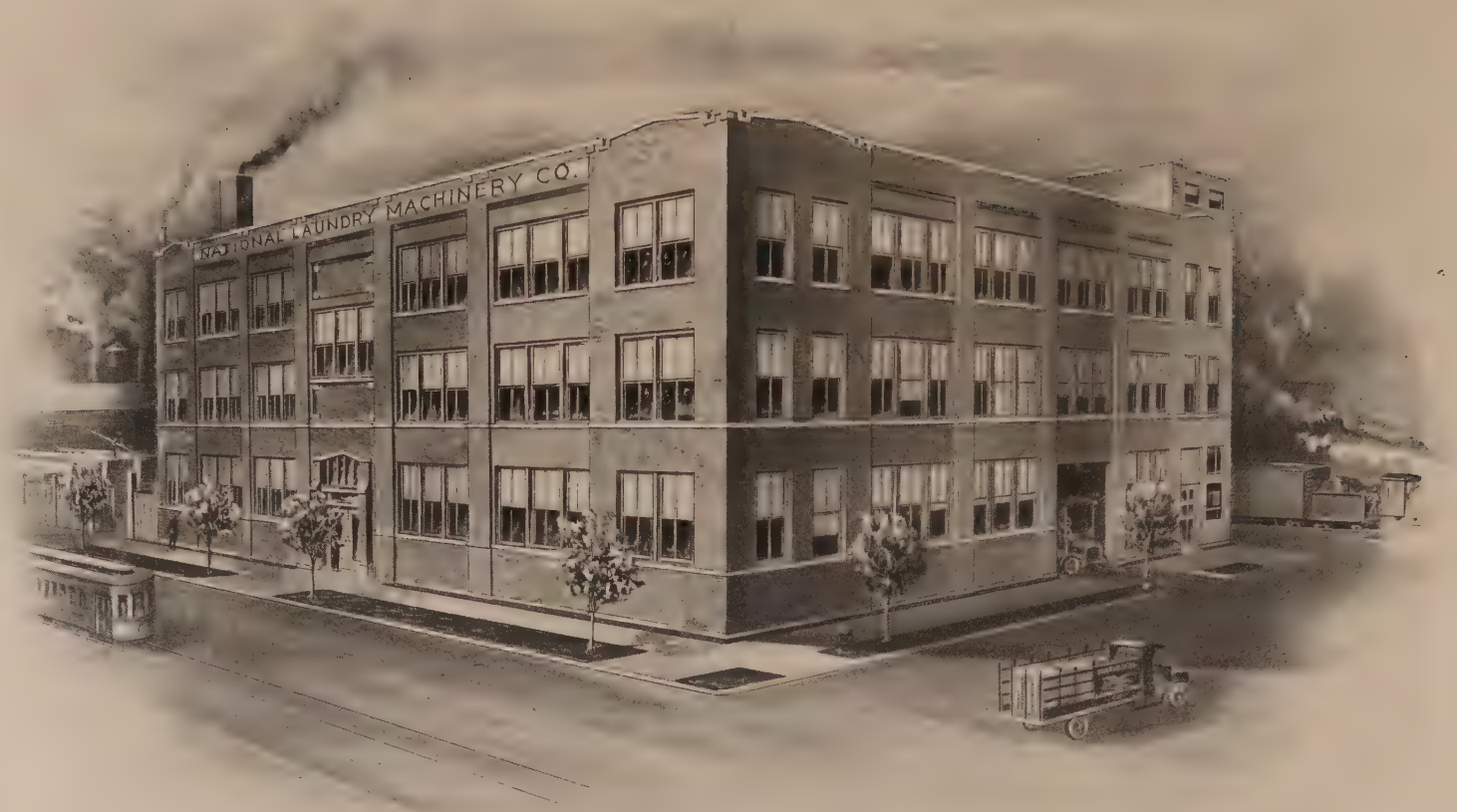
Arranging it so that the little company could secure the special machines of the big laundry machinery manufacturing companies best suited to the needs of the small laundryman, Mr. Kiehl personally made the rounds of his old friends and customers, explaining to them his new plan of operation, by which they might find it possible to install machinery such as used by their larger competitors and on terms that would not burden them.

The idea from the start met with a warm reception and it was not long before the old loft on Kenzie street again became vacant, so that when 1904 had rolled around, new quarters were found in a basement at Harrison and Dearborn streets.

Conservatism, perhaps necessary conservatism, however, marked this period of the Company's development, and in 1908 they found more commodious quarters at the corner of Randolph and Curtis streets. Again, in 1914 the constant growth of the business necessitated a further change and the present location was obtained, at Union avenue and Twenty-second street.

The successful development of Mr. Kiehl's idea meant many sleepless nights and many days of arduous physical toil; it meant courage, and vision and faith in oneself and one's fellowmen, and that faith was not always repaid.

The Big Seven manufacturers of laundry machinery by this time had through mergers dwindled to the Big Two, and Mr. Kiehl's company kept find-



NATIONAL LAUNDRY MACHINERY CO.

ing it harder and harder to secure machinery for his growing trade among the small merchants. As one after the other manufacturer ceased to exist as an independent concern, Mr. Kiehl began to see the "handwriting on the wall" for prices and terms formerly granted him became more and more restricted, until he began to despair of the efficacy of his "great idea" but ideas beget ideas, and so fertile a brain could not fail to find a solution of this problem, and now came the "greater idea."

Although Mr. Kiehl had helped to give the small merchants a little of the advantages of their bigger competitors, in the form of special service, advice and even credit, he now realized that the machines he had been selling them had been manufactured especially for the "big fellows." "Might as well put them in the average home, hotels and hospitals," he thought, and so with the new idea, Mr. Kiehl presented himself in front of the desk of the president of his bank. To this day, he is not so much surprised at the handsome line of credit with which he left the bank, as he is concerned to know how he controlled the wabbling of his knees as he made known his needs to the affable yet dignified banker.

With every dollar of capital the company could control and with the added access of this new credit, it was not long before patterns had been made and machines purchased or built for manufacturing their own line of especially designed machinery. The National Laundry Machinery Company, of which Mr. Kiehl is the President, Martha A. Kiehl, his wife, Secretary and John Kiehl, Vice President, was incorporated under the laws of Illinois.

And now as the story-writers so often do, we must go back six years, when the Company was in the midst of a business life-and-death struggle. Two other associates, with Mr. Kiehl then constituted the Company, one of them holding only two shares of stock and the other two members, forty-nine shares each. Mr. Kiehl woke up one morning to find that forty-nine and two made fifty-one and that fifty-one votes had been so used as to leave him and his own forty-nine shares where he did not care to be, so in order to protect his interests he made a very liberal offer to his associates to either buy or sell. This offer, however, did not meet with the approval of the other two members with the result that Mr. Kiehl was compelled to resort to the courts for protection, and after a year of litigation, the findings of the court were all in his favor and then the dissatisfied members of the Company readily offered to accept half the amount Mr. Kiehl had first agreed to pay for their share of the business. From this time on the business has flourished unceasingly. Mrs. Kiehl became actively associated with the business at this time and has contributed much to its advancement.

As a result of Mr. Kiehl's integrity and business ability, he numbers thousands of customers, many of whom claim him as a personal friend, for the success of these men have in a large part been due to the credit he has advanced them and to the inception of the "great idea" which at once placed them upon a more even footing with their larger competitors.

Here, at Twenty-second street and Union avenue, with all its grime and smoke shines steadily a light from Chicago's Aladdin lamp that virtually reaches to all parts of the globe, for the National Laundry Machinery Company is constantly shipping its product to all parts of the world.

Forty thousand square feet of floor space is utilized for the manufacture of

washing-machines, extractors, collar and cuff machines, flat work ironers and various patented specialties of the company. From supplying public laundries, the business has grown until there is no institution that cannot find machinery to meet most of its laundry needs in this establishment. Sixty-five or more persons are daily employed on an average pay-roll of about a thousand dollars a week. From a capital of a few hundred dollars the concern has grown until its annual output and business has attained nearly Two Hundred Thousand Dollars.

Prosaic, this story may be to those without imagination, but the reader with vision easily will find the glow from the magic lamp festooned with a glistening web of real romance.

Mr. Kiehl is a member of the Illinois Athletic Club, the Chicago Association of Commerce, Illinois Manufacturers' Association, and the National Credit Mens Association. In the time honored Masonic fraternity he is a member of St. Bernard Commandery, Oriental Consistory and the Mystic Shrine.

PEERLESS PISTON RING MANUFACTURING COMPANY

In 1915 M. B. Setter, a man whose mechanical and inventive genius had previously been responsible for the perfecting of many valuable devices of practical utility,—the patents upon which were assigned to his employers,—shows his initiative ability and self-reliance by arranging for the independent manufacturing of the Peerless piston ring which had been invented by him and upon which he had obtained patent under date of May 18th of that year. It was at this juncture in his career that he effected the organization of the Peerless Piston Ring Manufacturing Company, and the same was forthwith incorporated under the laws of Illinois and with a basic capital stock of five thousand dollars. The new corporation instituted operations in a small shop at 3755 Maple Court avenue, and so unequivocally favorable was the reception given to the Peerless piston rings upon their introduction upon the market that the productive capacity of the modest manufacturing plant was soon tested to the utmost and it became imperative to obtain larger quarters and extended facilities. Of the splendid advancement that has been made by the company within the short period of its existence it is needless to say more than that it has been found expedient to increase the capital stock to fifty thousand dollars. The officers chosen at the time of the incorporation of the company have continued their respective incumbency to the present time, M. B. Setter being president, George Setter the vice-president, and A. W. Hilker the secretary and treasurer.

To meet the requirements of greatly increasing production, the company purchased ground at 3848-52 North Clark street, and here erected the present factory building, fifty by one hundred and twenty-five feet in dimensions. The new plant was equipped with specially designed machinery and tools and formal possession was taken in October, 1916. Here the manufacturing of the Peerless rings has since been continued under most favorable conditions and the company is now producing these rings at the rate of fifty thousand per annum. Were the officials of the company to consider it expedient to change their established and

H. C. KIEHL

well ordered policy of conducting operations it is certain that a ready market could be obtained for a much larger number of products and that the business could be increased fourfold by closing contracts with manufacturers making use of the piston rings. However, the company has made the firm of Larson & Hilker, 19 South LaSalle street, exclusive distributing and sales agents for the entire output of the factory, and has had no desire to make any change in this plan of handling the products, the Peerless piston rings being already demanded as a standard appurtenance in connection with the manufacturing of automobile, motorcycle, aeroplane, marine and steam engines, air compressors, pumps, etc. With all of insistency and good faith the company has adhered to the policy of maintaining the highest possible standard of workmanship in its products, and has held that this policy must needs be sacrificed to a large extent if a contract system of manufacturing were adopted. Thus the output of the factory is far below the output capacity, which is for the production of fully one million of the piston rings annually.

The Peerless piston ring is uniformly regarded as the best device of the kind yet invented and as the only really efficient, simple, and economical ring on the market. Its superiority is based primarily upon the patented joint device, which maintains pressure and absolutely prevents leakage. The experience of the company demonstrates that compression practice with steam and gas has proved to engine manufacturers that an eccentric piston ring with the original foundry scale of the metal left intact on the inner surface is the only type mechanically correct, but the ordinary rings previously utilized failed to forfend against leakage, while the ring made with the Peerless patent lock-joint, simple and effective, obviates this defect and insures compression-tight and carbon-proof results. When installed in cylinders that are not warped or scored these Peerless rings are guaranteed to give more power, use less fuel and oil and more effectively eliminate the cause of carbonization than any other device of the kind. The Peerless rings are made from close-grain gray iron, with the original foundry scale of the metal on the inner surfaces, and the patented lock-joint is integral with the ring, thus eliminating loose or multiple parts. The rings are eccentric and insure uniform pressure on every point of their periphery. They are manufactured on specially designed machinery, are accurately ground throughout and are guaranteed within one one-thousandth part of an inch of specified dimensions.

The Peerless Piston Ring Manufacturing Company is called upon to execute a great amount of cylinder regrinding and other precision machine work, this department of the manufacturing plant showing a constantly increasing business and the most skilled mechanics being employed in this and all other departments, the corps of operatives now numbering about twenty men.

M. B. Setter, president of the Peerless Piston Ring Manufacturing Company, is nationally known as an electrical engineer and inventor, and as a technical experimentor, designer and inventor his services have been retained in the devising and producing of electrical equipment for important manufacturing concerns. For eighteen years he was in the employ of the Western Electric Company, for two years thereafter he was similarly associated with the American Electric Company and the ensuing fourteen years marked his alliance with the Automatic Electric Company of Chicago. In these many years of efficient

service Mr. Setter has mastered many involved mechanical and technical problems and he has invented about forty devices, the patents upon which were assigned to his employers. Prominent among these inventions may be noted transmitters, master-switches, spring jack, lamp jack, selected keys and rings, besides which he has perfected many other devices that are now established as standard equipment for the purposes for which they were designed.

Mr. Setter was born in Germany in 1862, a son of Jacob Setter, who here established his home fully 55 years ago. After having duly profited by the advantages of the public schools of his native city Mr. Setter here served a thorough apprenticeship and gained place as an expert machinist. With the passing years he gained broad and valuable experience in connection with applied electricity, steam engines, etc., and for a time he was an interested principal in the manufacturing of insulated wire and cable, his withdrawal from this line of enterprise having been followed by his assumption of a position as a technical expert. He is identified with various national and local organizations germane to his profession and his position as a successful manufacturer. Mr. Setter has always shown a most loyal interest in all things touching the welfare and progress of his native city. He has been a student and thinker and is known as a man of fine mentality and of that sterling integrity that ever begets popular confidence and esteem. The family home is at 3755 Maple Square avenue.

He is married to Miss Margaret Paulus, of Chicago, and they have 3 children, —George, who is vice-president of the Peerless Piston Ring Manufacturing Company, and Bessie who is the wife of A. W. Hilker, secretary and treasurer of the same company. One daughter, Mrs. C. H. Hart, Los Angeles, Cal.

HENRY WILLIAMSON GOSSARD

Henry Williamson Gossard, president of The H. W. Gossard Co., Inc., was born near Frankfort, Indiana, March 18th, 1871, the son of William and Cynthia (Armstrong) Gossard; he was educated in the public schools of Frankfort, Indiana; married June 19th, 1906, to Pearl Sunshine Miller. Salesman for G. H. Foster & Company of Chicago from 1889 to 1895, when the business of French, Gossard & Company was established (was succeeded by Gossard & Pinkerton), and in 1900 it was incorporated as The H. W. Gossard Co. (an Illinois corporation) and in 1917 reincorporated as The H. W. Gossard Co., Inc., a corporation of New York State. Clubs: Chicago Athletic, South Shore. Recreation: horseback riding, breeding of blooded horses, cattle, sheep and swine, hunting big game in Rocky Mountains. Residence: 1724 East Fifty-fourth street, Chicago, Ill. Country home: near Martinsville, Indiana.

The H. W. Gossard Co., Inc., makes and sells Gossard Front Lacing Corsets and accessories exclusively.

The invention of the Gossard Corset reads like a romance.

One day in the summer of 1902, our Paris representative, together with Mr. Gossard, discovered in Paris a front lacing corset manufactured by Madame Margaine Lacroix, a dressmaker of great renown, and designed by the Countess

Fould de Grasse, a painter whose art already had been acclaimed even in America.

The sole agency for America was secured for this L'Iresistible Corset, which was retailed to enthusiastic America at $25.00 each. The manufacture of these garments and the making of the improved Gossard came within the two years following.

The natural development of the sales of this original front lacing corset has resulted in the continuous employment of over 2,000 people, factories at Elkhart, Belvidere, Janesville, and Toronto, and the establishment of sales headquarters in New York and Buenos Aires.

The distribution is world-wide and Gossard Corsets are sold in every part of the world, not excepting the exclusive shops of Paris and London, or the exquisite shops on Calle Florida, the Fifth avenue of Buenos Aires.

The unparalleled success of the commodity has been maintained only because of the correctness of its principles and the high standard of its manufacture, until now the battle has been won against what long ago should have been obsolete methods of corsetry. Today Gossard Corsets are fighting the inevitable battle of every successful product—the battle against imitation. Gossard publicity has been so national in its scope that women have come to consider Gossard more than a name—it has come to mean front lacing corsets made by Gossard.

WELLER METAL PRODUCTS COMPANY

One of the more recently established but thoroughly well organized industrial enterprises of Chicago is that conducted under the above title, and the office headquarters of the company are maintained at 745 Webster building. The company was organized and incorporated in March, 1917, with a capital stock of ten thousand dollars and with executive officers as here noted: B. I. Weller, president; J. A. Rankin, vice-president; and F. V. Nelson, secretary and treasurer. The primary functions assigned in organizing the corporation were those of manufacturing sheet-metal products for the use of grain elevators, flour and feed mills and coal-handling plants.

The well equipped manufacturing plant of the company is established at Sixty-first street and Archer avenue, in the suburban district known as Argo, and here the factory has about four hundred feet of switch track connecting with the Indiana Harbor Belt Line, so that the best of facilities are gained for the handling of incoming materials and the shipping of manufactured products, splendid success having attended the enterprise and the business having already been extended into the most diverse sections of the United States. By reason of the broad acquaintanceship and high reputation gained by the principals in this company in trade circles, the new enterprise was virtually assured of success at the time of its inception and the rapid and substantial growth of the business has fully justified the good judgment of the promoters and founders. In consonant with specifications and designs the company manufactures to order a full assortment of chutes, spouts, conveying buckets, leg casings and other accessories required in manufacturing plants of the kind previously noted in this

paragraph, and the company controls also the patents on a spiral stair of remarkable efficiency and superiority, the device being notable for lightness and strength and having met with unqualified approval in connection with mill equipment. The company utilizes for its plant about three acres of ground and the buildings and general equipment are such that the establishment can handle monthly about seventy-five tons of sheet steel, from three-sixteenths to number eighteen gauge. During its first year of active operations the plant furnished employment to an average of twenty-five men.

B. I. Weller, president of the company of which mention is made in the foregoing paragraphs, was born at Meadville, Pennsylvania, and has been a resident of Chicago since 1905, in which year he here entered the employ of the James Stewart Company. Later he engaged individually in a general brokerage business, in the handling of a varied line of metal products, his activities in this field of enterprise having continued until he became associated in the organization and incorporation of the Weller Metal Products Company, of which he has since been the president. He is a vigorous and progressive business man and takes loyal interest in civic affairs in the city of his adoption. He is affiliated with the Masonic fraternity.

ATLAS MANUFACTURING COMPANY

The gigantic industrial activities of Chicago have involved the upbuilding of many enterprises that are the most extensive of their respective kinds in the world and that have played large part in giving the city pre-eminence as a manufacturing and distributing center. The province of this publication is not confined to consideration of such great concerns merely but includes also the recognition of younger industrial institutions that have here gained substantial foothold and that set no restrictions on future growth, theirs being distinct and worthy contribution to the normal industrialism that makes Chicago one of the world's greatest commercial centers.

The Atlas Manufacturing Company bases its claims to recognition on worthy effort and worthy achievement in the field of manufacturing enterprise, and the elements of cumulative success are firmly fixed in its organization and service. Thus fortified the company is destined to occupy a staunch vantage-ground in connection with the sheet-metal manufacturing industry in Chicago.

In the year 1915 William Meyer and William Buettner, both expert mechanics, formed a partnership and engaged in business in a modest way, their original shop, equipped for general job work, having been established on Kimball avenue and having given a floor space of only two hundred and fifty square feet. The partners were well known to several of the large manufacturing concerns of Chicago as skilled mechanics and men of sterling character, and thus they had no difficulty in securing supporting patronage when they established their independent business enterprise. Within six months it became imperative for them to seek larger quarters, and, in consonance with their limited capital and their conservative policies, they made no conspicuous exploitation but effected the lease of the two floors of the building at 2940 West Lake street, where

they thus gained sixteen hundred square feet of floor space. Providing adequate equipment of machinery and tools, the firm soon found its business so rapidly increasing as to justify the leasing of another entire floor of the same building, thus doubling the amount of available space, the while the contingent of employes was correspondingly augmented. Early in 1917 the company leased the entire building, a well ventilated, daylight industrial structure of one story, and in the accommodation of the different departments of the business this building is placed in effective requisition.

In 1916 the founders of this business began the manufacture of metal hoods for the use of the Atlas Film Company, a representative concern engaged in the manufacturing of films for moving pictures. Several hundred of these hoods have been turned out in the factory since that time and the company controls also a large and prosperous jobbing business in the manufacturing of metal signs and other high-grade metal products. Among the metal specialties manufactured are hoods for various types of lamps, these being produced for lamp manufacturers, and a special line of film boxes and patented smokers represent a part of the output of the manufactory. Since the 1st of January, 1917, the company has figured as the sole manufacturer of the Shaw patented smokers, a device effectually employed for the smoking out of ground-moles, gophers, and other earth-burrowing animals. The title of the Atlas Manufacturing Company was adopted by the two partners in 1916, but the business has not been incorporated. In following paragraphs mention is made of the two principals in the development and ownership of this prosperous and well ordered industrial enterprise.

William Meyer was born in the city of Copenhagen, Germany, on the 22d of February, 1868, and is a son of William Meyer, Sr., who was for many years a sheet-metal manufacturer in that fine industrial city of Denmark. The subject of this sketch was afforded the advantages of the excellent public schools of his native city and thereafter served in his father's establishment a thorough apprenticeship to the trade of metal worker, in which he became an expert artisan. Early in 1893 Mr. Meyer came to the United States, and after being employed at his trade for several months at Manistee, Michigan, he came to Chicago and entered the employ of the Johnson Hardware Company, on North Grand avenue. Three months later he took a position in the shops of the Peter Kramer Manufacturing Company, on Wells street, and two months thereafter he secured a position in the employ of the C. H. Hanson Company, one of the oldest and largest metal manufacturing concerns in the city. After continuing his alliance with this company eight years, under most pleasing relations, Mr. Meyer resigned his position, in order that he might indulge his desire to travel about and learn more of the country of his adoption. He visited various states of the Union and had many interesting experiences in his sojourns. Finally he made his way to Seattle, Washington, and there he remained one year, during which he worked at his trade in the establishment of Ernest Brothers. He then returned to Chicago and for the ensuing four years he held the position of foreman in the manufactory of the Knight Light Company. At the expiration of this period William Buettner became associated with Mr. Meyer in establishing the independent industrial enterprise which they now conduct under the title of the Atlas Manufacturing Company, as noted

in the foregoing review. Mr. Meyer has the personal superintendency of the factory and his ability and energetic application have done much to conserve the success of the business. He is in full sympathy with properly organized labor interests, and is himself a member of the Local Union No. 115.

In 1890, in his native city of Copenhagen, Mr. Meyer wedded Miss Betty Ekelund, and she shared his travels and experiences in the United States prior to his engaging in business for himself. Of their four children only one is living, Emma, who was born in 1896 and who remains at the parental home.

William Buettner, the senior partner of the Atlas Manufacturing Company, is in age about one month older than his honored and valued associate, William Meyer. He was born in Stralsund, Province of Pomerania, Prussia, on the 19th of January, 1868, his father, George Buettner, having been for a long period of years established in business as a manufacturer of metal products in the city of Stralsund, where the son acquired his youthful education and where he began at the age of fifteen years a practical apprenticeship in his father's metal-working shop. After completing his three years' apprenticeship William Buettner traveled through Germany as a journeyman at his trade, devoting one year to such work in order to secure his diploma as a skilled mechanic. Within this interval he was employed in various German cities, including Berlin, Dresden, and Rostock.

In 1890, in order to obtain better opportunities for the achieving of success through his personal endeavors, Mr. Buettner immigrated to America, and soon after his arrival in the port of New York city he came to Chicago. For the first year he was here employed in the factory of the Gibson & Parish Company, the following year he gained further experience, while in the employ of Mueller Brothers, and for eight years thereafter he was retained as a skilled mechanic in the great billiard-table manufactory of the Brunswick-Balke-Collender Company. The next three years he was giving equally efficient service in the employ of the Wolff Plumbing Supply Company. He then became associated with Mr. Meyer in establishing the independent business which they now conduct under the title of the Atlas Manufacturing Company. He is in active affiliation with union trade organization and both are independent in politics, giving their support to men and measures meeting the approval of their judgment. Mr. Buettner holds membership in the Knights of the Maccabees and the Gegenseitze Unterstützung Verein.

In Chicago the year 1891 was marked by the marriage of Mr. Buettner to Miss Lina Zwernemann, who likewise was born and reared in Stralsund, Prussia, and who had been his childhood friend and playmate. They have one child, Erna, who is now the wife of Albert Kohnke, of Chicago.

STANDARD DIE & SPECIALTY CO.

The well equipped headquarters of this company are established in the building at 169-73 North Jefferson street, and the concern here has the best modern facilities for the manufacturing of a great variety of metal specialties and for designing and building special machinery, machine parts, tools, dies, jigs, fix-

tures, gauges, etc. With technical experts retained in the various departments, the company gives much attention to the designing and manufacturing of high-class tools to experimental and development work incidental to mechanical inventions and to the perfecting of working models. The company turns out high-grade screw-machine products, does all manner of punch-press work and metal contract manufacturing, besides manufacturing washers of special sizes, in metal or fiber. The equipment of the plant includes the best provisions for the hardening and tempering of metals, and the mechanical appurtenances of the establishment include the most approved types of grinders, large milling machines, drill presses, screw presses, punch presses, lathes, sharpeners, etc., with the best of general apparatus and tools for efficient and economical production. Gas furnaces employed in the hardening and tempering processes are of the utmost efficiency and this important department of the enterprise is under the direct supervision of Gustave Selander, whose practical experience in the metal trades has covered a period of thirty years and who is a recognized expert and authority in this special field of industrialism.

The Standard Die & Specialty Company was organized in 1912, and the interested principals in establishing the business under this title were Gustave Selander, Axel Selander, John Holmquist and Christian Anderson. The Selander brothers are both expert machinists and have charge of the factory and general production, the while Messrs. Holmquist and Anderson supervise the office and commercial departments of the well established and substantial business. The factory utilizes five thousand square feet of floor space, and the company has in its employ several of the best modelmakers to be found in the United States, the general corps of skilled mechanics employed in the establishment averaging forty persons. The large and representative clientele of the concern indicates significantly the efficiency of service rendered and the effective commercial policies maintained by the company. Among the many important firms and corporations that make use of the admirable facilities of the Standard Die & Specialty Company may consistently be mentioned the following named, with incidental reference to the type of work handled for each by the concern of which this review is descriptive: Streeter Clip Manufacturing Company, Chicago (tools, dies, etc.); Charles W. Shonk Company, Maywood, Illinois (tools, dies, etc.); United Supply Company, Springfield, Illinois (miners' lamps and other specialties); Protex Manufacturing Company, Chicago (automobile accessories); Standard Art Calendar Company, Chicago (dies and stamping); Standard Recordograph Company, Chicago (time and cost recording devices, etc.); Replogle Manufacturing Company, Chicago (manufacturing moving picture machines); Feldman System Manufacturing Company, Chicago (loose-leaf devices and other special work); General Devices & Fittings Company, Chicago (dies and stamping); Chicago Metal Products Company (high-speed automatic machine tools, etc.); City Brass Works, Chicago (dies and stamping for automobile accessories); Wilcox Manufacturing Company, Chicago (locomotive valve gaskets, etc.); L. F. Clark Company, Chicago (dies, stamping, etc.); Benson Manufacturing Company, Aurora, Illinois (dies and stamping for letter files, steel filing cabinets, etc.); Great Lakes Manufacturing Company, North Chicago (special machinery and other work); Lindsley Brothers, Spokane, Washington (special machinery, appliances, etc.); Tinsel Manufacturing Company,

Milwaukee (dies, stamping, etc.); Whittaker Manufacturing Company, Chicago (special machine parts, etc.); Advance-Rumely Company, LaPorte, Indiana (jigs and fixtures for farm tractor manufacturing); Koehler Dies & Specialty Company, DeKalb, Illinois (small tools, dies, etc.), being specialists in production of tools and dies for adding machines, typewriters, check protectors etc.

Gustave Selander who has been most resourceful, both technically and practically, in connection with the upbuilding of the substantial business with which he is thus associated, as noted in a preceding paragraph, has developed and patented a number of valuable inventions, including buffing-wheel hub, which permits the use of worn-cloth buffing in metal polishers and buffing wheels, this patent being leased and the device being manufactured by L'Homedieu & Sons Company, of Chicago. He also invented and patented the Selander Tool Holder, for lathe tools, which is pronounced by authorities as being the most effective device of the kind on the market, and this is manufactured by the company in which he is a principal. Axel Selander, who shares in the active management of the factory of the Standard Die & Specialty Company, likewise is an expert machinist of broad and varied experience.

THE MACHINERY WAREHOUSE COMPANY

Over and over again has it been proved that Chicago is ever ready to extend its splendid advantages and fostering influence to every business enterprise of legitimate order and proper management, and from small inceptions have been developed innumerable industrial and commercial concerns that in their respective spheres are of great direct and incidental value to the city and to other business enterprises. This has been significantly true in the case of the Machinery Warehouse Company, which is unique in its functions and the success of which has been of substantial order, the business showing a constantly cumulative tendency. The fine modern storehouse of this company is eligibly situated at the corner of Thirty-seventh street and South Ashland avenue, adjacent to the great Chicago Stock Yards. The business was founded in 1911, in a modest way, and its development and upbuilding has been due almost entirely to the energy and aggressive policies of James M. Taft, who now has sole control of the enterprise and who was but thirty-eight years of age when he projected the same, with a distinct idea of its practicability and ultimate value. He effected the organization of a stock company, which was duly incorporated, but in 1913, after having made the enterprise a distinctive success, he purchased the interests of all of the other stockholders, so that he has since been the sole owner.

The year 1917 recorded the completion of the fine modern warehouse of this company at the corner of Thirty-eighth and Laflin streets, the structure being of the best fireproof construction and modern architectural design, and its dimensions in the main being three hundred twenty-five by one hundred feet. The building was carefully designed and equipped for the uses to which it is applied, and it affords great storage capacity for machinery of all kinds, a traveling crane, supported on rails from the girders near the roof, conveying the heaviest of loads from one end to the other of the building. The roof is of con-

crete, firmly secured to the steel frame of the building, and the facial walls are of red and Milwaukee brick. The structure gives an aggregate floor space of 63,700 square feet. Into the center of the building runs a spur track from the Chicago Junction Railroad, so that the best of transportation facilities are provided. South of the warehouse is what is commonly designated as the scrap yard, one hundred by three hundred feet in dimensions, and this is in part used for the temporary disposition of the scrap metal accumulated by the firm of Feinberg & Kahn.

In the progressive management of his business Mr. Taft gives special attention to the purchase and sale of contractors' supplies and equipment, and from his establishment are to be obtained also steam shovels, steam and electric tools and machinery of varied types, besides which he handles scrap metal on a rather extensive scale. The business has shown a remarkable growth and expansion and in connection with the same there is now controlled a substantial trade in the handling of rubber tires for trucks, the hydraulic machine used for the putting on of such tires being the best obtainable. Mr. Taft has become well known as a general contractor and has developed a specially large enterprise along the line of contract teaming and hauling, his stables being located at 1117 West Adams street and having accommodation for more than one hundred horses. In connection with this department of his business he operates a well equipped wagon and blacksmith shop. He has shown good judgment in making provisions for prompt making of repairs on all material machinery and other equipments utilized in his various operations, and thus eliminates much deterioration and wastage often noted in connection with other and similar lines of enterprise. In the teaming department of his business he is president of the Taft Cartage Company; he is president also of the Vacuum Impregnating Company, and a director of the Farm Products Company. The individual review that follows gives further data concerning his eminently successful career as a business man.

JAMES M. TAFT

Mr. Taft is a native son of Chicago and in a significant way is an exponent of its vital and progressive spirit, as his achievement well shows. He was born in Chicago on the 23d of July, 1872, and is a son of Joseph W. and Sarah R. (Kilmore) Taft, both of whom are now deceased, his father having come to Chicago from the east in the early sixties and having been for a number of years engaged in the picture-frame business in this city. Mr. Taft acquired his early educational discipline in the public schools and it is a matter of much satisfaction to him to recall that while he was attending the grammar school its principal was Mrs. Ella Flagg Young, the revered and distinguished educator who later became superintendent of schools for the city of Chicago. He availed himself also of the advantages of the high school and of the Chicago Manual Training School. After leaving school he entered the employ of the Miehle Printing Press Company, of which his father was then president, and here he learned the machinist's trade with all thoroughness. After a period of five years he was made assistant superintendent of the company's extensive factory.

In 1894 Mr. Taft obtained a half-interest in a teaming business that at the time utilized only six horses. This was the nucleus of the enormous teaming business now controlled by the Taft Teaming Company, and the concern is not only one of the largest of the kind in Chicago but also conducts substantial operations in New York city and Pittsburgh. The company makes a specialty of heavy-tonnage contracts, in which the equipment of entire manufacturing plants are transported from one locality to another. In this connection it is worthy of special note that this company held and executed the contract for the removing of the equipment of the American Bank Note Company from its quarters in the rear of historic old Trinity church, New York city, to the new plant at Hunt's Point, in the borough of the Bronx,—a distance of thirteen and one-half miles. This involved the transporting of much heavy machinery and the contract for the transfer was awarded in the sum of thirty-seven thousand dollars.

In politics Mr. Taft is a Republican, and he holds membership in the Central Manufacturing Club, the Beverly Club, the Hamilton Club, and the Chicago Traffic Club.

At Pittsburgh, Pennsylvania, on the 19th of February, 1902, was solemnized the marriage of Mr. Taft to Miss Augusta May Jope, and they reside at 5400 South Park avenue. They have one child, Mary Louise Taft.

ECONOMY PUMPING MACHINERY COMPANY

In the manufacturing of its high-grade and remarkably efficient products this company well merits the title adopted in its incorporation, its well equipped manufacturing plant being established at 116-118 North Carpenter street, where is utilized an aggregate floor space of eleven thousand square feet. In an article of this province it is impossible to enter into specific description of the various products manufactured by the company, but in a general way it may be noted that the output of the factory includes sewage ejectors, bilge pumps, cellar drainers, automatic condensation pumps and receivers, automatic electric house pumps and water systems, automatic electric fire pumps, automatic-direct-action vacuum pumps for heating systems, centrifugal pumps (single and multi-stage, fire service, vertical, irrigating, hot-water circulating, general service), triplex plunger pumps for sprinkler and domestic service, plunger pumps for both deep and shallow wells, deep-well power heads, air compressors, and hand air pumps. The sewage ejectors manufactured by the company are automatic and are adapted in their different forms for operation by electric, steam or pneumatic power, including an automatic duplex submergible type and automatic electric dry-pump chamber, virtually the same types of bilge pumps being likewise produced, while cellar drainers operated hydraulically are produced in both automatic and non-automatic types. In the official guaranty made by the company in connection with all its products are noted the following statements: "We guarantee any pump built by us to be of the best in both quality and service. We further guarantee it against any inherent imperfections in workmanship or material for a period of one year from date of delivery." The com-

JAMES M. TAFT

pany's Economy ejectors have been installed in many of the largest and most modern office buildings and industrial institutions, hotels, etc., in Chicago, as well as in important buildings in other cities of the United States and also in Canada. In the definite efficiency of service the products manufactured by the Economy Pumping Machinery Company are based their claims to superiority and this same practical efficiency, as demonstrated in each successive installment of the mechanisms, constitutes the most effective, as well as a cumulative, medium of advertising. Special attention is given to the production of pumps used in connection with building operations, for sewage, and for service water in buildings of the sky-scraper order, special air pumps being manufactured for all purposes, as well as pumps to stimulate the efficiency of steam and hot-water heating plants. The company has sales agencies in all large cities and from the general office of the factory may be obtained catalogues and other descriptive literature.

The business of this progressive industrial corporation was founded in 1914, the company is incorporated under the laws of Illinois and its executive officers are as here designated: R. H. Thomas, president and treasurer, and W. W. Huggins, vice-president and secretary.

R. H. Thomas, president of the company, was born at Allegheny, Pennsylvania, but was reared and educated in the city of Hoboken, New Jersey. In 1892 he came to Chicago and assumed the office of manager of the construction department of the Kelley & Jones Company. In 1895 he became one of the organizers of the firm of Thomas & Smith, which engaged in the heating and ventilating business and in the initial development of the substantial manufacturing enterprise now conducted by the Economy Pumping Machinery Company, of which Mr. Thomas has been president from the time of its incorporation. Mr. Thomas has shown not a little inventive ability, and to his credit is the invention of the "Economy" air-cooling system that is now utilized in all leading hotels and restaurants throughout the United States.

W. W. Huggins, vice-president and secretary of the Economy Pumping Machinery Company, was born at Albany, Illinois, where he was reared to manhood and received his early educational discipline. Coming to Chicago in 1903, Mr. Huggins was here in the employ of Thomas & Smith until the business of this firm developed to such an extent as to result in the organization and incorporation of the Economy Pumping Machinery Company, of which he has since been vice-president and secretary. In a fraternal way he is affiliated with the Knights of Pythias.

PRUYN BALL BEARING WORKS

At 1919 South Michigan boulevard, Chicago, is established the western office of this concern, which is one of the most important of its kind in the United States, the factory and main office of the company being maintained at Frankford, a suburb of the city of Philadelphia, Pennsylvania. The business was founded in 1910 by Henry S. Pruyn, who is considered an expert on ball-bearings, and he assigned as the functions of the new enterprise which he thus established at Frankford, Pennsylvania, the repairing or redeeming of

ball bearings that had been worn to the condition where under ordinary circumstances their complete replacement was necessary, especially in connection with the operation of automobiles. Mr. Pruyn began operations in a little basement shop only twelve by twenty feet in dimensions, and the original corps of employees numbered only two persons. By the end of the first year the enterprise had so expanded, due to efficiency of service, that the force of employees was doubled and the shop appreciably enlarged. In repairing ball bearings in such a way as to redeem fully their efficiency, Mr. Pruyn had obtained by this time the clientage of four of the largest taxicab companies operating in leading eastern cities, including one corporation that was operating twelve hundred imported taxicabs in New York city. The commendation and support thus incidentally gained established the business of Mr. Pruyn in substantial favor with the trade, and the enterprise rapidly increased in scope and importance. The work undertaken brought about the development of a special machine which is now used by nearly all large manufacturers of ball bearings.

By 1912 the business had increased to such a volume that Mr. Pruyn purchased at Frankford a lot forty by two hundred feet in dimensions, and a building on the same was properly remodeled and equipped for the handling of the business. Early in 1913 Henry S. Pruyn, Jr., son of the founder, took charge of the shop, with about eight employees, and within that year the equipment of the factory was increased about fourfold, besides which a two-story building was added for office, stock and shipping departments.

In 1914 J. Ernest Pruyn, another son, became associated with the business, and Henry S. Pruyn, Jr., at this time assumed charge of the sales department of the enterprise. The present factory and office building, at 4410 Paul street, Frankford, was erected in 1914, and is a thoroughly modern structure forty by one hundred and twenty feet in dimensions.

In the summer of 1914, realizing the major importance of Chicago as a center of the automobile industry, the Pruyn Ball Bearing Works obtained in this city office and salesrooms at 2138 South Michigan boulevard, and Henry S. Pruyn, Jr., assumed the active supervision of sales from the western office.

In 1916 removal was made to larger quarters, at 1919 South Michigan boulevard, where an entire floor of the building is now occupied by the concern, the business from these headquarters having attained to large proportions.

As specialists in the repairing of ball bearings the Pruyn Ball Bearing Works so refit worn bearings that they are equal to new and are supplied at the fraction of the cost of new bearings. By specially devised methods and machinery the company regrind the races on which the balls roll to an absolute true surface, fit in a new set of special balls of highest quality alloy steel, and a new bronze separator or cage of special one-piece type. The balls are so fitted that there is insured perfect freedom of action without play, dropping balls or binding in the bearing. At each of its offices the company keeps a complete stock of reground bearings for immediate exchange, but exceptionally large orders are handled at the factory headquarters in Frankford, Pennsylvania.

The company has developed a special design of double-row bearing and the reground bearings handled are largely of European manufacture. Under normal conditions the concern turns out an average of more than sixty to seventy thousand bearings yearly, and about twenty-five per cent of the business is now

handled from the western office, in Chicago. Here are retained three salesmen, in addition to office assistants, and in the control of its extensive business in the territory east of the Rocky Mountains and the company now has branch agencies in about forty different cities.

Henry S. Pruyn, Jr., manager of the Chicago offices and business of the Pruyn Ball Bearing Works, was born in New York state, received the advantages of the public schools and as a youth gained thorough mechanical experience of the most practical order. He is one of the vigorous young business men of the western metropolis, where he has become well known to the automobile trade and where his circle of friends is coincident with that of his acquaintances. He is affiliated with the Masonic fraternity and the Chicago Motor Club.

SANITARY BOTTLE WASHING CO., LTD.

This company was organized on the 24th day of November, 1914, for the purpose of introducing "Specialties" for Bottlers.

THE CHICAGO METAL PRODUCTS COMPANY

This well ordered industrial concern of Chicago was organized and incorporated on the 14th of January, 1914, with C. F. Roberts as president and J. G. Roberts as secretary and treasurer. The company was organized primarily for the purpose of manufacturing an improved type of automatic screw machine products and a line of tools for special shop purposes being specialists in the development of mechanical problems and metal products. The company later developed and placed on the market a gearless electric phonograph motor, fully covered by patents, and the device, owing to its indisputable superiority, has met with most favorable reception on the part of manufacturers of phonographs. A great advantage in the use of this motor is that it entirely eliminates the noise of cog-grinding so noticeable in the operation of the wheels of the standard phonograph motor, and this improved device is undoubtedly the only one of the type on the market at the present time.

The Chicago Metal Products Company began operations in limited quarters at 501 South Jefferson street, where during the first year about two thousand square feet of floor space were utilized and the number of employes limited to about fifteen men. By careful policies and judicious management the company developed in this initial year a business that aggregated about forty thousand dollars, and the success of the enterprise attracted no little attention thereto. Early in 1916, to meet the increasing demands placed upon the plant, the company added thirty-five hundred square feet to the floor space in requisition, and since that time, at the original location, further addition has been made until at the present the aggregate floor space is fully eight thousand square feet, in the building at 501-517 South Jefferson street. Here employment is given to an average force of about forty mechanics, and the exceptional success that

has attended the new and vigorous industrial enterprise has been due to the energy and progressive policies of the executive officers of the company, their thorough technical and business experience having come most effectively into play in insuring the results that are indicated in the statement that the annual business of the company has now attained an average of one hundred thousand dollars. It will thus be seen that all conditions and influence augur for a continuous and cumulative growth of the enterprise. The mechanical facilities of the plant are kept up to the highest standard at all times and vital energy is infused in the business by its popular and progressive principals, who are now interested in several sub-contracts on war work and developing of special instruments and equipment that is felt will revolutionize the manufacture of these parts.

Another special feature is the manufacture of a motorless automatic sign flasher designed to reduce the expense of electric light. Both of these gentlemen are representative business men of the younger generation in Chicago.

F. C. Roberts, president of the Chicago Metal Products Company, was born at St. Louis, Missouri, in 1885, and was a boy at the time of the family removal to Chicago, where he received the advantages of the public schools, this discipline having been supplemented by a special course in Lawrenceville Academy, at Lawrenceville, New Jersey.

J. G. Roberts, secretary and treasurer of the Chicago Metal Products Company, has been his brother's efficient coadjutor in the upbuilding of the prosperous business and has been a resident of Chicago from the time of his birth, which occurred in the year 1893. He received his early education in the public schools and in his business career he has shown the qualities that make for enduring success and consecutive advancement. He is a member of the Evanston Country Club.

KASTORY MANUFACTURING COMPANY

In the attractive suburb of La Grange is established the large and well ordered industrial plant of this company, and the same is one of the largest and best equipped factories to be found in the industrial district of the western metropolis for the designing and building of special and stock bodies for motor trucks, the term or trademark of "Quality" having been consistently adopted to designate the commercial and delivery automobile bodies manufactured by this representative concern. The factory of the Kastory Manufacturing Company was erected by this corporation specifically for the purpose to which it is applied, and here are employed twenty skilled woodworkers and machinists. The business, well organized and most efficiently ordered, has shown a remarkable growth and expansion and the cumulative tendency is still in distinct force, products from the factory being shipped into the most diverse sections of the United States.

The vigorous industrial enterprise conducted by the Kastory Manufacturing Company had its virtual inception in a modest trimming shop established at the location of the present factory, 301-309 Hillgrove avenue, La Grange, by William Kies, and on the 10th of July, 1910, the well established business

was purchased by A. Kastory, now president of the company that bears his name. Mr. Kastory brought to bear splendid initiative and constructive ability, progressive business policies and expert knowledge gained by prior experience as a skilled workman, along technical lines, as well as a factory and financial executive. Under his vigorous administration has been built up a most substantial and important industrial enterprise subsidiary to the general automobile industry. The factory is of brick and mill construction and gives twelve thousand square feet of floor space. This area is entirely exclusive of that devoted to warehouse and storage purposes. The plant shows a finely equipped woodworking department, machine and forge shop, drafting and designing rooms, painting and drying departments, etc.

Among important automobile manufacturers who are availing themselves of the services of the Kastory Manufacturing Company in acquiring lot supplies of bodies for motor trucks may be noted the following named: The Republic Motor Truck Company, the Autocar Company, the Olsen Unit Company, the Sandow Motor Truck Company, the Stewart Motor Company (Hudford Company), the Hudford Company, the Maxwell Motor Company, the Kenyon Motor Truck Company, besides which the list of clients mentioned might be indefinitely multiplied in recording names of other representative manufacturing and wholesale concerns in the automobile trade.

George Shuck, vice-president of the Kastory Manufacturing Company, has had many years of experience as body builder and designer, and this experience has come most effectively into play in his present alliance. Since identifying himself with the present company he has had active charge of the designing and woodworking departments of the factory, and in the 1918 automobile show in Chicago he exhibited several special automobile truck bodies designed by him, the result being that the company of which he is vice-president received important orders on the first day of the exhibition, with the promotion of subsequent orders from all parts of the country and in such number as to test the capacity of the manufacturing plant. The company adheres rigidly to its policy of not sacrificing quality by speeding up production, and thus its reputation is a valuable commercial asset. From a booklet issued by the company may well be made the following quotations, though there is no demand in this publication for detailed information that is supplied in the literature issued by the various concerns here represented:

"A large part of our business consists in designing and building special made-to-order bodies for Ford chassis, truck attachments and for heavy trucks where the requirements are such that they are seldom duplicated. It is of greatest importance to the buyer of a commercial body to know that he is getting a body that will withstand the terrific strains to which it will be subjected. There is no economy in buying a cheap body that is made to meet a price. The Kastory Manufacturing Company is not the 'largest' body factory, nor the oldest. We make no boast of a huge number of bodies turned out daily. We do not attempt to increase our output by 'speeding up'. methods or careless or slipshod work. Every body is hand built and receives the best efforts of a force of skilled workmen. For that reason, if for no other, Kastory 'Quality' bodies are the most satisfactory and most economical in the long run."

The Kastory Manufacturing Company was incorporated in 1916, under the

laws of Illinois, and the personnel of its official corps has remained unchanged from the beginning, as here designated: A. Kastory, president; George Shuck, vice-president; and F. D. Cossitt, secretary and treasurer.

A. Kastory, the progressive young captain of industry who is president of the company described in the foregoing paragraphs, was born at Alsace, Germany, in the year 1885, and as a lad of twelve years imperative necessity compelled him to leave the school room, owing to a disordered condition of his eyes, and under these conditions he took a position in the large carriage factory owned by one of his uncles at Tamm Severin, Prussia. There he learned every detail and branch of carriage making and there he continued to be employed until 1904, when he established his residence in Chicago. Here he readily found employment in the manufactory of A. R. Muesslers & Company, and later he was similarly associated with other representative industrial concerns. Finally he established himself independently in the manufacturing business, and has won secure vantage-ground as one of the successful young business men of Chicago. He is a member of the directorate of the La Grange Business Men's Association and takes lively interest in civic affairs in general.

George Shuck, vice-president of the Kastory Manufacturing Company, has contributed his full share to the development and upbuilding of the prosperous business of the company and is a skilled draftsman and designer, he having full charge of factory production in the woodworking department. He is an expert body builder and brings to bear this technical skill in connection with the management of the business with which he is identified.

Franklin Dwight Cossit, secretary and treasurer of the Kastory Manufacturing Company, is one of the representative business men and citizens of the younger generation in La Grange, where he has given efficient service as a member of board of commissioners of highways and also as a director of the La Grange State Bank. The same spirit of loyalty that has made him a successful business man is shown in his service as a member of the United States army, with which at the time of this writing, in the spring of 1918, he is preparing to enter active service in the great war in which the most of the nations of the world have become involved.

ALEMITE METALS COMPANY

The large and important industrial enterprise conducted by this progressive corporation is based essentially on the technical, inventive and executive ability of its founder, John S. Gullborg, who is president of the company and who has attained to international reputation as an engineer and inventor. He was the inventor of the now celebrated Alemite process for the compounding of several different metals into suitable compositions for the manufacturing of dies, tools, die-castings, etc., and to him also is due the invention and perfecting of producing under high pressure the best type of die-castings in steel dies. The first full automatic die-casting machine introduced in the industrial world was invented by Mr. Gullborg, along original lines and in accord with principles worked out by him in his prolonged and careful research and experimentation,

and the successful application of this remarkable invention needs no further voucher than the large and important industrial business that has been evolved by the company of which he is president. Relative to the inception and growth of the enterprise thus founded on the invention just noted, the following quotations are specially pertinent:

"Mr. Gullborg built his first machine and compounded his first Alemite metal in his private garage, which was utilized as a temporary laboratory and experimental shop. This primitive establishment, at 4631 Beacon street, gave twelve hundred square feet of floor space, but provision was made to accommodate the three assistants whom Mr. Gullborg retained in the initial stage of the operations. Here productive activities began on the 1st of January, 1912, and after the first machine was completed and had been given a thorough trial, the Alemite Metal Company organized and incorporated, with officers as here noted: Charles W. Steger, president; John S. Gullborg, vice-president; Andrew Carlson, treasurer, and H. Tillotson, secretary. In 1913 the company instituted operations on a commercial scale, by establishing its plant at 214 North Carpenter street, where was placed in commission a floor space about forty by sixty feet in dimensions, and where the corps of employes was twenty-five in number. So substantial was the success that attended the new industry that within a few years it became essential to obtain much larger factory accommodations. In 1916 removal was made to the present well equipped plant, at 341-51 West Chicago avenue, where is utilized a floor space of thirteen thousand square feet and where the force of employes now averages eighty-five persons under normal industrial conditions. The demand for the products of the Alemite Metals Company was created through the successful application of Alemite die-castings to the manufacture of apparatus that has affected a great saving in productive cost, as well as maximum efficiency in operation."

In the modern industrial plant of the Alemite Metals Company have been constructed and installed fourteen specially large automatic die-casting machines, besides a large battery of smaller machines, and the mechanical facilities in all departments are of the best type. The special compound of metals to which has been given the name of Alemite is used extensively in the manufacturing of parts for automobiles, carburetors, typewriter parts, talking machine parts, and similar parts used in check-protecting devices, moving-picture mechanisms, and casings for the smaller types of electric motors, as well as in the producing of a remarkably enduring line of bearings for small machinery, automatic musical instruments and many other types of small but intricate machinery. The factory of the company turns out an average of about twenty thousand Alemite die-castings daily under normal conditions, and it is specially to be noted that all casting manufactured by this process need no subsequent machining. The personnel of the official corps of the company at the present time is as here designated: John S. Gullborg, president and general manager; Carl M. Hedman, vice-president; Herbert R. Hedman, secretary; and Douglas F. Fesler, treasurer. In appending paragraphs is consistently given a brief review of the career of the honored founder of this important industrial enterprise.

John S. Gullborg was born at Sandhem, Vestergotland, Sweden, on the 20th of August, 1863. The early educational advantages of Mr. Gullborg were

those of the common schools of his native land and those of a well ordered technical school at Jonkoping. As a youth he entered upon a thorough apprenticeship to the trade of machinist, and he was favored in gaining such discipline in the great Vulcan works in his native land. In the arms factory of Husqvarna, Sweden, he made his first invention, involving an improved method to be applied in the manufacturing of guns. This invention brought to him recognition and increased emolument, and his ability and effective service would have brought to him further advancement on the part of the great industrial corporation by which he was employed. His ambition, however, led him to seek a broader field of productive activity, and he determined to come to the United States. Arriving in New York City on the 22nd of April, 1886, the sturdy young man soon found employment in the factory of the Windsor Locks Machine Company, at Windsor Locks, Connecticut. In the following autumn he came to Chicago and this city has since continued the stage of his progressive activities in the field of practical industrialism. In the western metropolis he found employment in the bicycle factory of the Gormley & Jeffery Company, and in 1889 he accepted a position as a foreman in the Excelsior Iron Works, where he continued to be employed until 1893, when he was given the position of general foreman in the ice-machine manufactory of John Featherstone & Sons. Two years later he initiated his first independent industrial enterprise, under the title of the Gullborg Bicycle Company. In 1898 he began the manufacture of telephone instruments, and this enterprise was the nucleus around which was developed the substantial business later controlled by the Swedish American Telephone Company, to which corporation Mr. Gullborg sold his factory in 1902. At this juncture in his career he became master mechanic in the factory of the Stromberg-Carlson Telephone Company, and in this connection he invented a large number of new and valuable instruments and devices that greatly improved the company's system and methods of manufacturing. He developed also the equipment of the Stromberg-Carlson cable and wire plant in Rochester, New York.

JOHN S. GULLBORG

One of the most important inventions of Mr. Gullborg was the Stromberg

carburetor, which he developed in 1906. In the fall of the same year he became associated with Messrs. Stromberg, Carlson and Steger in the organization and incorporation of the Stromberg Motor Devices Company, and during the six years of his alliance with this company he was constantly engaged in inventive work and in improving methods of manufacture. His carburetor became famous throughout the motor world.

In 1912 the fine inventive talent of Mr. Gullborg directed its course along new avenues of production, and his study and research led to his inventing of an entirely new automatic die-casting machine, his career since that time having been adequately outlined in the foregoing article, descriptive of the Alemite Metals Company, of which he was the organizer and of which he is now president and general manager. Concerning him the following significant statement has been made: "He has already to his credit half a hundred patents and his fertile mind continues its search for new devices."

The finest loyalty characterizes Mr. Gullborg in his civic attitude and he is a popular member of representative social and fraternal organizations in his home city. He is actively identified with the Swedish Club, the Svithiod Singing Club and the Swedish Engineers' Society of Chicago, and is affiliated with Golden Rule Lodge, No. 726, Ancient Free & Accepted Masons, besides which he is a member and liberal supporter of the Swedish Old People's Home Association.

THE PIERCE WRAPPING MACHINE COMPANY

In the twentieth century there are no other lines of industrial enterprise along which such great and important developments and advancement have been made as in connection with the manifold forms of applied electricity and in the field of automobile manufacturing. The Pierce Wrapping Machine Company has developed a most successful manufacturing business that touches closely and with indubitable value both of these great phases of industrial activity, and altogether original and unique in design and functions are the Pierce wrapping machines that today are installed in virtually all leading manufacturing plants in which are produced either insulated wire or rubber tires, this implying that the Pierce patents cover machines for the wrapping of insulated wire and also of the varied types of rubber tires used on automobiles and minor vehicles.

Of the genesis and growth of the business controlled by the Company whose title initiates this paragraph the following pertinent record has been written:

A number of years ago William B. and Frank M. Pierce, brothers, had gained secure prestige as expert electrical men and were giving their attention insistently to industrial electricity. Their studies and observations led them to experimenting in the problem of effecting some means for the rapid and enduring wrapping of insulated wire. Dominated by the inventive talent of Frank M. Pierce, the research, investigation and experimentation of the two brothers were vigorously carried forward during what would otherwise have been their leisure hours evenings, and on Sundays and holidays. Their efforts were directed to the devising and constructing of machinery capable of wrapping, with paper and at speed, coils of wire for storage and shipment. As an indication of the difficulties

involved in perfecting a machine for this work, it should be kept in mind that a number of manufacturers of wire making machinery had for years past, been unable to produce such a machine, so the expensive and slow method of wrapping by hand all the wire, turned out by the wire mills of the country, continued.

After several years of untiring effort, involving also the expenditure of some ten thousand dollars, they had made such progress that they felt justified in devoting their entire time and means to the perfection of a machine for the purpose designated. The Pierce wrapping machine for wire was perfected in 1911, in which year United States patents were granted on the invention. The first perfected machine was installed that year in the Chicago factory of the American Insulated Wire & Cable Company, where it is still in commission and giving effective service.

The Pierce Wrapping Machine Company was organized and incorporated in August, 1911, under the laws of Illinois, and its capital stock was placed at thirty thousand dollars, William B. Pierce becoming president of the Company and Frank M. Pierce its secretary and treasurer. The two still retain these executive offices. The new corporation forthwith effected the lease of the eighth floor of the Electrical Building, 617-27 West Jackson Boulevard, and these quarters continued to be utilized at the present time. After William B. Pierce, as sales representative of the Company, had made an effective canvass of the leading wire manufacturing centers of the New England states and had through his effective exploitation and arguments convinced four of the largest insulated wire concerns of the entire practicability and definite value of the Pierce machines, four of these machines were promptly constructed and soon afterward were installed in the plants of each of the following named corporations: The National India Rubber Company, of Bristol, R. I.; the American Electrical Works of Phillipsdale, R. I.; the Phillips Insulated Wire Company, of Pawtucket, R. I.; and the Simplex Wire & Cable Company, of Boston, Mass. It is interesting to record that each of these machines has since been in daily operation and is giving unqualified satisfaction.

To the original wire wrapping machine a number of additions and improvements have been made—the most valuable of which was the gummed tape attachment to both the wire and tire wrapping machines. Both the machines and the integral parts thereof are protected by basic-principle patents. Also the principle of applying the gummed tape, either by hand or machine, to hold the several layers of spiral wrapping in position is broadly covered by United States and Foreign patents and belongs to this Company.

The original wire wrapping machine was primarily designed to wrap small coils—especially coils of small inside diameter, but seeing the need of a machine more particularly adapted to wrapping large coils of wire that would wrap with burlap as well as paper, no effort was spared to produce such a machine, and which machine was warmly welcomed by the wire manufacturers.

The Company next directed attention to the inquiries and demands that came to the headquarters relative to the providing of a machine for equally effective wrapping of rubber tires, for protection in shipment and storage. In 1912 the Company produced such a machine, and the same has met with the highest approval, as shown by the fact that virtually ninety per cent of the rubber tires manufactured today are wrapped through the medium of the Pierce machines, besides

F. M. PIERCE

W. B. PIERCE

which the tire manufacturing companies that have been organized and have initiated operations within the last five years have invariably made the Pierce machines a part of the standard equipment of their plants. The practical monopoly in wrapping machines which the Company enjoys is largely due to the fact that all dangerously competitive wrapping machines that have sprung up in recent years have been bought up by the Company and taken off the market so that today the Pierce machines are the only machines of practical worth procurable.

From the first the Company protected its most valuable inventions by patents in all principal European manufacturing countries, and in 1914 exhibited and demonstrated their machines at the International Rubber Exhibition, London, England, with the result that numerous orders were secured for these machines and in the case of the Dunlop Rubber Co., Ltd., England, resulted in the ordering of eleven additional; also despite the great difficulty and high rates on ocean transportation due to the war, the Company has shipped machines to France, Italy and Russia.

The most recent achievement of the Pierce Wrapping Machine Company, is the designing and manufacturing of a machine for wrapping cloth on tires for vulcanizing, the most important feature of which is that the machine is even more suitably adapted to removing the cloth wrapping from the vulcanized tires, and simultaneously with removing the wrapping, prepares it for re-use on the unvulcanized tires.

The Pierce Wrapping Machine Company handles the wrapping paper used on its machines, and in the year 1916 sold over one thousand tons of this material.

The Company controls patents on fully twelve inventions and has other patents pending. The factory is fully equipped for the making and assembling of the various machines manufactured, and the corps of employees includes an average of about twenty skilled mechanics.

HUMBOLDT MANUFACTURING COMPANY

In the manufacturing of a great diversity of laboratory apparatus and supplies this Chicago corporation has gained precedence as one of the most important American concerns in its special field of productive industry, and the splendidly equipped manufacturing plant of the company is established at 2014 Nebraska avenue. At the present location this business was founded on the 1st of May, 1909, by Louis H. Martens, who later gained a most valued associate in the enterprise, in the person of his nephew, Herman A. Richert, who had previously acquired wide factory experience in the designing and producing of scientific instruments and laboratory apparatus. The factory occupies a modern two-story building, twenty by fifty feet in dimensions, and it is equipped throughout with the best type of machinery, tools and accessories for the manufacturing of the various products, many of which are of the most delicate mechanical order. In the factory constant employment is given to a force of about fifteen highly skilled artisans and all products are recognized as constituting throughout America and foreign countries the ultimate standard of excellence in their line, there being

few if any civilized countries in the world in which can not be found in use various products manufactured by the progressive Chicago corporation.

In founding his new enterprise Mr. Martens had primarily in mind the manufacturing of asphalt and cement testing apparatus and supplies, but since that time the functions of the concern have been amplified to include the manufacturing also of a greatly diversified assortment of high-grade laboratory apparatus and supplies of general order. The company is strongly fortified for the construction of special apparatus on contract and in accordance with original drawings and specifications, while in every instance is assured the finest grade of workmanship and material. Suggestions relative to improvements in laboratory apparatus and the making of new instruments are gladly heeded by the company at all times, and the factory is prepared to handle efficiently apparatus-repair work at a minimum expense. It is specially to be noted that the goods manufactured by the company, notwithstanding their fine grade of workmanship and their general superiority, are placed on the market at prices as low as those demanded for products of far less intrinsic merit. While it is quite impossible to give in an article of this restricted order any detailed description of the great variety of products manufactured by this company it is but consistent to mention a few of the more important, the catalogues and bulletins issued by the concern giving full data that is thus available to all who seek such information. Of major importance on the list of products are the asphalt testing apparatus and cementation machine, a fine estimate of which was given in the Journal of Industrial & Engineering Chemistry of December, 1914; the Humboldt ductility machines; testing troughs with penetrometers; adhesion machines; electrical air-blasts, lamps, stoves and burners; testing thermometers; balances of all kinds; various types of blast burners; cement testing machines; crucibles, cutters, electrodes and electrolysis apparatus; oil testers and viscosimeters, and hundreds of other scientific instruments and laboratory apparatus.

LOUIS H. MARTENS

Louis H. Martens is the inventor of the Martens cement-briquette mold, upon which he received a patent February 8, 1910. This admirable device has an

effective provision for the separating of sections automatically without rapping, and meets most effectively the requirements and specifications of the American Society for Testing Materials. Mr. Martens has been a resident of Chicago since 1882 and during virtually his entire business career he has been actively identified with the designing and manufacturing of scientific instruments and apparatus, in which field of industrial enterprise he is a recognized authority. For a number of years he was superintendent of the factory of C. H. Storing & Company, and thereafter he held similar preferment with E. H. Sargeant & Company until he resigned to found the business of which he has since continued the executive head and which is conducted under the title of the Humboldt Manufacturing Company. He is a member of several representative scientific associations and as an inventor has made valuable contribution to scientific and industrial progress.

THE CHICAGO WOOD CARVING COMPANY

An industry of no inconsiderable magnitude, with operations based on ample capital and all that thorough technical and executive experience can bestow, is that conducted under the title which forms the caption of this article. The enterprise was founded in 1907, by William Dewees, who began the manufacturing of high-grade carved spindles, with headquarters at 1509 North Halsted street, where he utilized a floor space of about five thousand square feet and where he gave employment to a force of about ten cabinetmakers. In the same year he effected the incorporation of the business under the present title, and his associate was Henry Miller, who had been employed in one of the departments of the great musical-instrument manufactory of Lyon & Healy and who had severed his relations when that corporation sold the business of the department in which he had been employed. Later Mr. Dewees sold his interest in the business of the Chicago Wood Carving Company to William Lecke, who likewise had been employed in the abandoned department of the Lyon & Healy manufactory. Under the title of Miller & Lecke was successfully continued the manufacturing of carved spindles, and the necessary machinery was added to enable the concern also to conduct a general jobbing and wood-turning business. With the expansion of the business was effected the lease of another floor of the same building, and thus the available space was doubled, the while the force of employes was consistently increased. Substantial growth and prosperity attended the business and on the 1st of April, 1913, Hans C. Filstrup, who is now president of the company and virtually in control of the business, purchased the interest of William Lecke. Early in the following year he acquired also the interest of Mr. Miller, and in 1914 he abandoned the manufacturing of spindles and directed his attention to the manufacturing of specially high-grade and artistic furniture of largely original design and sold for decorative purposes. The new venture has proved most successful and has resulted in the development of a substantial industrial and commercial enterprise in the manufacturing of complete, artistic and harmonious suits of high-grade furniture for the equipment of parlors, living rooms, dining rooms and bed rooms. All products are made from the highest grade of hard woods of every variety, and the individuality of the suits makes special appeal to the finest artistic taste.

The superior grade of the furniture is indicated by the fact that the prices per set range from five and six hundred dollars up. The products are of the best type of workmanship in every particular, and in manufacturing the same is demanded the service of the most skilled woodworkers, many of whom, including Mr. Filstrup himself, are artists in their profession. It will thus be understood that the incidental expense of manufacture is large and that the furniture turned out by the Chicago Wood Carving Company makes definite appeal to connoisseurs and others who demand the best in artistic conceptions and fine workmanship. The technical skill, the indomitable energy and the progressive policies of Mr. Filstrup have gained for the products of his factory a wide and enviable reputation and his furniture is much in demand in the homes of the wealthy and influential families of Chicago and vicinity. A third floor has been added to the accommodations of the factory, and the average force of skilled artisans is now in excess of thirty-five, the well-ordered enterprise showing a constantly cumulative tendency.

The virtual owner and executive head of the company mentioned in the preceding paragraph is a man who has achieved success through his own ability and efforts and he has won secure place as an honored and valued representative of industrial enterprise in Chicago. Mr. Filstrup was born near the fine old town of Odense, capital of the island of Funen, Denmark, and the date of his nativity was on July 23, 1859. He continued to attend school until he was fourteen years of age and thereafter made himself useful about the parental home until he had attained the age of seventeen years. He then entered upon an apprenticeship to the trade of cabinetmaking, and incidentally acquired also the trade of making musical instruments of varied descriptions, in which latter field of artisanship he became a recognized expert in his native land.

H. C. Filstrup

Mr. Filstrup was about twenty-five years of age at the time of his arrival in Chicago, in 1884, and his financial resources at this juncture in his career were summed up in two and one-half dollars. At Ravenswood he found employment in the Cubley musical-instrument factory, and one year later he secured a position as a skilled artisan in the great musical-instrument factory of Lyon &

Healy. After the expiration of five years he was made foreman of his department, and he continued his association with Lyon & Healy for the long period of twenty-three years, during a considerable part of which he was general superintendent of all of the wood-working departments of the extensive plant. Mr. Filstrup made the model from which the famous Washburne mandolins are manufactured, and he still retains a number of valued souvenir photographs of fine guitars and mandolins that were made by him and that sold for exceptionally large prices. After the Lyon & Healy company sold its wood-working department to the Singer Sewing Machine Company Mr. Filstrup continued in the service of the latter corporation for a period of six years, as foreman and superintendent of the cabinet shops. In 1913 he resigned his position and identified himself with the business of which he soon became the executive head and which under his able management has become one of the substantial and important industries of Chicago,—that of the Chicago Wood Carving Company.

Mr. Filstrup is affiliated with the Masonic fraternity.

HOEPNER AUTOMATIC SCALE COMPANY

In the manufacturing of the high-grade automatic weighing devices representing the inventive genius of George Hoepner, this company has gained a place of definite precedence in this special field of industrial enterprise, and its well appointed factory is established at 1401-5 Jackson boulevard. The company now produces in its factory the world's most complete line of automatic weighing machines and accessories, and the Hoepner machines represent the maximum of efficiency, so that their use has been extended not only throughout the United States but also into foreign countries. As consonant with the province of this publication may be entered the following quotations from one of the attractive catalogues issued by the company:

"At this day and age the time has come where food products are mostly put up in packages, and the use of the Hoepner Unit System has made it an economical method, both for the manufacturer and the retailer, besides insuring perfect sanitary conditions. All commodities packed in bags, cartons, etc., can be handled automatically with our unit-scale system. Our gravity scales are of the two-compartment type. This feature alone gives them the advantage over any single-hopper automatic scale. They are provided also with a main and secondary cut-off and mercury latch to control the scale lever when the first cut-off is being made; this insures against vibration of the scale lever and properly to cut off the secondary dribble. This method means speed and accuracy. For sacking purposes these scales have no equal. This same type is used also for continuous weighing purposes, and with counters such provision is made that a complete check can be kept."

The remarkable superiority of the Hoepner scales may be understood even from a cursory survey of the catalogues issued by the company, and to the same those desiring information are referred. The Hoepner automatic bag-filling machine is a marvel of efficiency, and may be used in combination with the Hoepner filled-bag closing machine and the Hoepner unit automatic system.

The factory of this company also turns out a unique rolled-oats packer of high speed filling machines, two-compartment elevator and mill scales, and various accessories that combine to make the concern one of great industrial, commercial and economic importance.

The final test of superiority is practical efficiency and no further voucher for the great value of the Hoepner products is needed than a perusal of the list of testimonials of clients using the various types of machines. For instance in Chicago may be noted as users of the Hoepner devices the leading representative concerns, preparing package goods for the wholesale and retail trade, and the same may be said of other leading cities in the world.

Even this brief review indicates the importance of the functions of the Hoepner Automatic Scale Company in facilitating and substantiating commercial and industrial transactions and operations, and the concern well merits recognition in this publication.

GEORGE HOEPNER

This company holds membership in the Illinois Manufacturer's Association.

George Hoepner is a native of Illinois; born in Sandwich, where he received his education. Mr. Hoepner came to Chicago in 1888 and engaged in manufacturing. Later was superintendent of the Kankakee Manufacturing Company at Kankakee, Illinois, where he conceived the idea of the Automatic Scale and here built his first machine. In 1897 Mr. Hoepner removed to Sacramento, California, where he began manufacturing his scales in a commercial way. In 1898 the business was moved to San Francisco, and a corporation was organized under the name of the Union Scale Manufacturing Company, where the business was given a firm foundation and in 1901 the company was removed to Chicago. In 1904 Mr. Hoepner organized a private enterprise to manufacture the "Hoepner Scales System" and same was incorporated in Illinois in 1908, and the company is now building two hundred and nine different types of machines that are largely covered by patents almost wholly in the name of George Hoepner.

CHICAGO TIME LOCK COMPANY

Apropos of the importance and priority of this Chicago corporation are the following significant statements: "The standard time-lock of today is recognized as a commercial necessity, but to the Chicago Time Lock Company is due great credit in developing and producing a time lock and other lock equipment

of indubitably marked improvement." From one of the handsome catalogues issued by the company are taken the following quotations, with minor paraphrase:

"A few of the important features of our time-lock construction are included in the following points: A movement which may be used as an interchangeable unit and from which the variety of our locks are assembled, and which has a running capacity sufficient to cover all requirements, the movement being standardized at ninety-six hours. The strength of the wheels, pinions, pivots, jewels, and the several operating parts, is sufficient to resist concussion from high explosives or other methods of burglarious attack, thereby protecting the securities entrusted. All our movements are set with eleven ruby or sapphire jewels, which provides the greatest security and longest service. We use two steel, tempered ratchet pawls and nickel-plated bronze click springs on each movement. Through our double pawl system we are able to set our dial to a fifteen-minute period of locking. Our movements are finished in Damaskeen nickel, gold-plated train and blue-steel screws. The cases are made from cast bronze and designed in several forms, best adapted to the requirements of the doors to which they are to be applied, and these cases are of sufficient strength to protect the movements from damage. Special attention is called to the important features developed and used by this company in all of our cases, in which the locking mechanism is set in force independently of the winding of the movements and remains fully locked until the predetermined hour is reached,—a feature of great value, security and convenience to the user. Our automatic bolt motors have been developed to a high standard of excellence, possessing double and quadruple machine-steel draw bolts, non-concussion locking pawl and many other features of value."

The time locks manufactured by this company are produced in various models and with single and double movements, besides which specially effective triple and quadruple movements are an equally valuable output of the factory. The various mechanisms are protected by patents and the substantial business developed by the company has been based upon the recognized superiority represented in the maximum efficiency of products. Details concerning the various types of locks manufactured by the company are not properly to be considered in an article of this nature, and such information may be obtained from the literature issued in a direct way by the corporation itself.

The important industrial enterprise conducted by the Chicago Time Lock Company was founded in a most modest way, by Ernest A. Marsh, the inventor of the celebrated lock now manufactured upon an extensive scale. He began operations in a little shop which he arranged in his residence, at 1340 North Francisco street, and here, in 1903, he began to manufacture under the patents granted him on time locks and automatic bolt motors, deposit locks, etc. The absolute value of the inventions caused the business rapidly to expand in scope and in 1913 the present modern factory, at 2765 St. Mary's street, was erected, the building being twenty-four by eighty feet in dimensions and three stories in height. The mechanical equipment of the plant is of the best modern type in all departments and the facilities are such that operations are carried forward under most effective conditions.

In 1906 the business was incorporated under the present title and with a

capital stock of twenty-five thousand dollars. The officers of the company are as here designated: Ernest A. Marsh, president and treasurer; William F. Bierwirth, secretary; and Edward Appel, vice-president.

Mr. Marsh is regarded as America's ultimate authority in all matters pertaining to time locks, and for thirty years he has been closely identified with the line of industrial enterprise of which he is now a leading exponent. He was for many years associated with the Old Consolidated Time Lock Company, of Cincinnati, Ohio, in which connection he had supervision of the company's business in nine states, in the central and western part of the country. His engineering ability has long been recognized in trade circles and has led to his visiting practically every city of appreciable size in the Union. He made a deep study of the mechanisms and problems of time locks and was called upon to operate and repair all of the different types in use. His extended service along this line finally brought to him the conviction that a more efficient time lock could be evolved, and he devoted much time and thought in his effort to devise means for overcoming obvious defects existing in practically all former types of locks of this order. After long and arduous experimentation he perfected the time locks that bear his name and on which he was granted basic patents before he began manufacturing on a modest scale, as noted in a preceding paragraph. He is known as one of the leading experts in lock mechanics and as such he is frequently called upon even yet to give assistance in the adjustment of complicated locks that have failed to function properly. The Marsh time lock is the only ninety-six-hour lock manufactured, all others being forty-eight or seventy-two-hour locks, besides which the Marsh lock has made other points of remarkable superiority over all other types. The Marsh lock can unset after the clock is wound. It does not begin the movement of unlocking until the precise minute for which the clock had been set. Other locks open gradually, but the Marsh unlocks at one precise movement of the mechanism. The double, triple and quadruple movements of the Marsh locks insure the working of the mechanism even if only one of the units operate, each unit having a capacity double its requirement.

ECONOMY SCAFFOLD COMPANY

The ladder was the first form of scaffold used by the builders of old and historians note the gradual development from the earliest form to the present scaffold wherein successive tiers are, at the same time, used to furnish platforms for workmen or for the materials and implements of construction in immediate use.

The skyscraper and the elevator which made them tenantable as well as the modern scaffolding which made their construction possible have all emerged from the misty past within the last thirty-five years. For many years the inventive minds engaged in the building and contracting trades have been endeavoring to produce a practical and successful scaffolding which would be light in weight, sufficiently strong, compact in structure and easy to handle, which would, most of all, permit the repeated use of the same material on a basis of economy.

There was a time when any kind of scaffolding would do but conservation of both time and material is demanded by the advanced building trades of today. It remained for a Chicago steel construction engineer to devise a new system of scaffolding, after much experimentation and model testing, which embodies the right principles and composed of units or sections of tubular steel construction.

Mr. W. W. Horn, president of the Economy Scaffold Company, 4611-19 Fulton street, Chicago, is the inventor of the Economy Scaffold which since its recent introduction has been enthusiastically adopted by the leading contractors and ship builders of the entire country. The Economy system of steel construction has many noteworthy features which, after all, are almost too obvious to mention, to-wit: First cost is the last cost as the units are practically indestructible, simply in construction, light of weight, safer, stronger and more rigid are outstanding merits demonstrating it the most convenient, durable and economical ever put on the market. Added features is its greatest compactness for transporting and the simplicity of construction permitting rapidity in setting up or taking down the equipment in half the time required by all other scaffolds.

Various sizes of the "Economy" scaffolding are manufactured and carried in stock by the company for the especial needs of brick masons, carpenters, decorators, sheetmetal workers, railroad shops, shipyards, etc., in taking the place of the wood ladder and scaffold, commonly used by these and the many other trades performing work of like character as the scaffold is more rigid and therefore safer, requires less space and sets up just as quickly. Illustrated descriptive literature has been prepared by the company which will be furnished on request.

The Economy Scaffold Company are also manufacturers of the "Horn" collapsable, storage auto jacks which have been accepted as the best by public and private garages wherever introduced. Another steel constructed article of great utility and adaptability manufactured in various sizes is the Economy collapsible steel table which is now used in all kinds of shops and factories throughout the country.

Mr. Horn is the inventor of steel building joists anchors in two different designs which have been approved and used in quantities by building contractors in all parts of the United States. Mr. Horn has been granted four patents by the U. S. government on the "Economy Scaffold" and has others pending which is now regarded and used as standard equipment by the largest and leading builders and shipyards. The first patent is dated October 1, 1914, and those following cover the adjustable trestle, sectional scaffold, joist anchors and table.

The company was organized and incorporated July 1, 1917, and Mr. Horn has since been president and treasurer and in immediate charge of factory production and distribution. The building erected by the company as its home was designed by Mr. Horn, having in view the special needs of the business and is 50x108 in lateral dimensions.

Ample provision is made for the offices and draughting rooms by two stories provided in front and the factory proper has a round, steel trussed roof. The company owns sufficient ground between the factory and the Chicago Belt Rail-

road for future needs of expansion and part of which is now used for loading yards and storage warehouses.

The factory equipment is complete in every department from bolt cutting and threading machines, Angle bar benders' punch presses and forges and besides the company's own catalogued output is actively engaged in the manufacture of light steel parts of all kinds and for any industrial purpose on a jobbing or contract basis and this department has grown very rapidly due to the engineering capabilities of the factory force and ideal equipment for efficient and economical production. The plant is now turning out quantities of work for a number of contracting concerns in the city and environs and Mr. Horn will submit estimates upon similar proposals whether quantity desired is great or small.

Wm. W. Horn, president and treasurer of the Economy Scaffold Company, Inc., has been prominently identified with the steel structural interests of Chicago for the past eighteen years he coming to the city at the age of seventeen years and immediately made an advantageous alliance with the Wm. Horn Structural Iron Works where he remained seven years and soon rose to the incumbency of responsible position in the engineering and erecting departments of the business and such was his recognized ability that he was tendered a flattering offer from the Illinois Steel Company which he accepted and was a superintendent of erection work for this old historic Chicago steel making organization, which position he held for one year when he relinquished it by resignation to go with the American Bridge company and under his direction some of its largest industrial contracts in various parts of the country were energetically completed. This connection he severed, contrary to the advice of his superiors, to engage in the manufacture of his patents and for that purpose organized the Economy Scaffold Company as previously noted and thus another important manufacturing plant took its place in the Chicago industrial district with a young man of fine technical preparation and wide experience in the structural steel trade at its head and his resolute progressiveness insures a steady expansion of the business.

THE McDERMOTT PATTERN WORKS

Under the above title is conducted one of the oldest and most important industrial enterprises of the kind in Chicago,—one that has had and continues to have marked bearing in furtherance of all manner of productive industries in the great metropolis of the west. The well equipped establishment of the McDermott Pattern Works is located at 208 West Kinzie street, and the business was founded in 1898, by the late James C. McDermott, an uncle of the present proprietor. In the basement of a building at the corner of Indiana and LaSalle streets, the former of which is now designated as Grand avenue, James C. McDermott began on a very modest scale the manufacturing of steam engines. Owing to the excellence of products the business rapidly expanded in scope and it became necessary to acquire larger manufacturing quarters. Under these conditions removal was made to quarters that were acquired in the manufacturing

building of J. W. Reedy, at 213 West Grand avenue, and the friendship and association that was thus matured between Mr. McDermott and Mr. Reedy continued unbroken until the death of the former. In December, 1913, the McDermott Pattern Works were removed to the present location, where is utilized an entire floor, forty by one hundred and twenty feet in dimensions, and where the mechanical equipment and all accessories are of the best modern type, no expense having been spared in keeping the plant up to the highest standard of efficiency. It is the policy of the present proprietor to install promptly any machine for which there may be no more than occasional use, and in this connection it may he noted as an instance in point that a fine electric drill which he purchased for the work of one particular job has never since been required. The factory gives employment to fifteen skilled workmen, and the insistent executive policy demands the best work that equipment, material and skill can produce, all contracts being filled on this basis, regardless of incidental profit. This determined policy of efficiency of service under all conditions and at all times has been a great force in furthering the exceptional success of the business, and many of the most important manufacturing concerns of Chicago have been McDermott clients for many years.

The McDermott Pattern Works have turned out some specially interesting and noteworthy work and more specific mention may be made of special work done for the United States government,—balling chamber patterns, respectively seven and eight feet in diameter, these having been executed in a more direct way for the Sellers Manufacturing Company; and patterns for a seven-foot still for the distillation of benzol in a Pittsburgh factory in which are being produced government supplies incidental to the nation's participation in the great European war.

The McDermott plant is one of the largest of the kind in the west and is equipped to do all kinds of work, both large and small, a specialty being made of the execution of large pieces of pattern work and the establishing having almost constantly in hand a large amount of engine work. One of the interesting contracts secured by Mr. McDermott in the winter of 1917 was in the designing and developing of a motor for the Joy Motor Company, of Butte, Montana, a concern that is supplying the government with motors. In the perfecting of the patterns and model of the motor in the McDermott shops the work had the close personal supervision of Mr. Joy, the inventor and designer of the motor.

JAMES C. McDERMOTT

James C. McDermott, the honored founder of the business described in the preceding paragraphs, was born in County Roscommon, Ireland, and he came to the United States and established his residence in Chicago prior to the Civil war. Here he was for many years foreman in a leading pattern shop and finally he engaged in business for himself, by founding the important industrial enterprise now conducted by his nephew, under the title of the McDermott Pattern Works. Mr. McDermott was a man of sterling character and marked ability, was well and favorably known in industrial, church and social circles in the city

that was his home for many years, and his love for fine horses caused him to become a prominent and striking figure in connection with turf events and as an intimate and valued friend of the representative followers of legitimate horse racing and other sports. His circle of friends was limited only by that of his acquaintances and he was one of the venerable and honored figures in Chicago's industrial life at the time of his death, which occurred January 10, 1910.

HENRY H. McDERMOTT

Henry H. McDermott, who succeeded to the ownership of the important industrial enterprise founded by his uncle, as noted in preceding paragraphs, was born in the city of Grand Rapids, Michigan, November 18, 1883, and is a son of John and Annie (Horan) McDermott, his father having been proprietor of one of the largest plumbing establishments in Grand Rapids until he sold the business to engage in the same line of enterprise in the city of Detroit, metropolis of the same state. Henry H. McDermott was a child at the time of the family removal to Detroit, where he attended the parochial school of St. Aloysius church, one of the oldest and most historical Catholic parishes of Detroit, and thereafter he pursued higher academic studies by attending for three years the Detroit College, conducted under the auspices of the Jesuit Fathers.

In 1898 Mr. McDermott came to Chicago and joined his uncle, in whose factory he learned with utmost thoroughness all technical and practical details pertaining to the making of mechanical patterns and models. To broaden his experience he was thereafter employed for a time in other Chicago shops besides being similarly engaged for one year in the city of Milwaukee. He then resumed his active association with his uncle and upon the death of the latter it was found that his will devised the entire plant and business to the nephew who has been his valued coadjutor. Mr. McDermott is recognized as one of the foremost experts in his field of enterprise in the United States, and his technical skill makes him a specially valuable counselor in connection with all kinds of work pertaining to patterns and models of intricate machinery and other mechanical devices. He is an influential and popular member of the Pattern-makers Employers Association, and formerly served as a director of the same. He is essentially a business man and aside from his activities in connection with his industrial establishment and business he finds his chief pleasure in the gracious associations of his attractive home, in the beautiful suburb of Wilmette. He and his wife are zealous communicants of the Catholic church and he is affiliated with the Holy Name Society.

THE VISCOSITY OIL COMPANY

In the volume of its business and in general commercial importance this is one of the leading concerns of its kind in Chicago, and its trade extends

H. H. McDERMOTT

McDERMOTT PATTERN SHOP

throughout the wide radius of country normally tributary to the western metropolis as a distributing center. The business was founded on the 1st of January, 1895, and the interested principles were Samuel A. Johnson, who was made president and treasurer of the new company; Herbert D. Blackford, of St. Paul, Minnesota, who became a salesman for the corporation; Charles E. Hatry, of Minneapolis; Frank Travers, of Beloit, Wisconsin, who likewise became a salesman for the company; W. D. Simmons, of Grand Rapids, Michigan; and Frank E. Elliott, of Chicago. For the first five years Mr. Johnson, the president of the company, had charge of its affairs at the Chicago headquarters and the other members of the company represented it as salesmen. In 1900 Mr. Johnson sold to his associates his interest in the business, for a consideration of thirty thousand dollars, and from that time forward to 1906 Herbert D. Blackford was president of the corporation. In the year last mentioned Wm. D. Simmons was elected president, Mr. Blackford having sold his interest for twenty-five thousand dollars.

The original headquarters of this company in Chicago were at 2123 River street, where was occupied the first floor and basement of a store building. In 1909 removal was made to 1101 West Thirty-seventh street, where possession was taken of a substantial industrial building with a frontage of ninety-two feet. At this location the company now utilizes twenty-nine thousand square feet of floor space and its battery of storage tanks comprises fifty-one in number, with an aggregate capacity for the storage of six hundred thousand gallons. The company handles all kinds of lubricating oils, the compounding of which is done at the plant in Chicago, where employment is given to twenty-five persons, including a number of expert chemists, certain of whom are graduates of the great and historic Heidelberg University, Germany. The oil products are sold in a direct way to the trade, and the trade territory covered extends throughout the central states and as far to the east as Pittsburgh, to the west as Denver and south to the Missouri river, besides which an appreciable export business has been developed. The company retains in its service a corps of about twenty-five efficient traveling salesmen. The plant in Chicago is a substantial industrial building of the best type of mill construction and well lighted and equipped, the while the storage tanks are of the best steel construction. From a comparatively modest inception the business of this progressive company has grown year by year until the average annual transactions now represent about five hundred thousand dollars. Wm. D. Simmons is president of the company and Frank C. Duffy is its secretary and treasurer, both being made subjects of more specific mention in following paragraphs.

WM. D. SIMMONS

The president of the Viscosity Oil Company was born on a farm in Alamo township, Kalamazoo county, Michigan, October 27, 1856, and is a son of Samuel H. and Sarah (Lawrence) Simmons, who were pioneer settlers in that favored section of the Wolverine state, where the father was a substantial farmer. In the district schools of his native county Wm. D. Simmons acquired

his early education and he continued his active alliance with farm industry until he had attained to the age of twenty years. He then became salesman for a nursery and was successful in selling fruit trees to farmers. Later he amplified his experience by doing effective work in the selling of windmills and sewing machines, and for a short time thereafter he was engaged in the wholesale meat business. In 1889 he entered the employ of the Vacuum Oil Company, of Rochester, N. Y., and he continued his connection with this concern until 1895, when he became one of the organizers of the Viscosity Oil Company, of which he is now the president. His progressive policies and well ordered executive control have been fruitful in the expansion of the business to its present large volume, and he holds place as one of the vigorous and representative factors in the commercial circles of Chicago. He has been actively identified with the splendid development of Chicago's celebrated Central Manufacturing District, in which his company was among the first to locate its plant, and he had the distinction of being chosen the first president of the Central Manufacturing District Club, in the affairs of which he is still influential. Mr. Simmons is affiliated with the Masonic fraternity and the Modern Woodmen of America.

April 18, 1881, recorded the marriage of Mr. Simmons to Miss Harriet E. French, of Grand Rapids, Michigan, and the one child of this union is Grace L., wife of Harry D. Firth, of Grand Rapids, Michigan.

F. C. DUFFY

Secretary and treasurer of the Viscosity Oil Company. He was born in Chicago on the 2d of September, 1884, and is a son of Peter and Susan Duffy, who established their home in this city in the '60s. The father was for many years successfully engaged in the express and cartage business in Chicago, where he and his wife still reside and where he is now living virtually retired.

F. C. Duffy continued his studies in the public schools until he had duly profited by the curriculum of the high school, and in 1903 he began service as office boy for the Viscosity Oil Company. His advancement with this corporation has been won by ability and effective service and he has been secretary of the company since December, 1914. Since December of the following year he has served also as treasurer, and in his dual office he is effectively handling the general office, and the fiscal affairs of the substantial corporation. He is actively identified with the Central Manufacturing District Club.

In June, 1906, was solemnized the marriage of Mr. Duffy to Miss Lillian McKim, of Chicago, and they have two children,—William and Ella.

JAMES J. JOHNSON

In the application of the art of photography to commercial purposes there has been a remarkable development within the past decade, especially in connec-

tion with the issuing of advertising vehicles of varied types, and this advancement has opened a field for successful photographic enterprise conducted on a large scale. In the city of Chicago one of the best equipped and most modern commercial photographic plants is that owned and conducted by James J. Johnson, at 732 Federal street, where he occupies one-half of the twelfth floor of the Borland Building, one of the important industrial buildings in the central business district of the city.

Mr. Johnson engaged in his present line of business in 1900, when he instituted operations on a modest scale, with limited quarters in a building on West Madison street. Superiority of products and effective service in general brought results, and the enterprise proved successful from the beginning. Mr. Johnson gained the supporting patronage and definite approval of leading manufacturers and mail-order houses that availed themselves of the advantages of his establishment, and with the substantial growth of his business he finally found it necessary to secure more eligible quarters. At this juncture he removed his plant to the Pontiac Building, at the corner of Dearborn and Harrison streets, and there he continued operations with constantly increasing success for several years. Demand for more space then led to his removal to a building at 610 Federal street, and in 1913 the same element of insistence incidental to business expansion led to his taking possession of his present large and finely equipped quarters. Here he now has the best of scientific apparatus and accessories and as an effective a lighting system as is to be found in any similar institution in the United States. The clientage of the Johnson photographic establishment is of large and representative order, including many of the important industrial and commercial concerns of Chicago, and he permits nothing to impinge in the slightest degree upon the high standard of production which he set for his studio at the time when he initiated his independent business in this line. He has had a long and varied experience in every department of the photographic business and is recognized as an expert not only in the scientific and practical details of photography but also in the application of the art to modern uses in connection with reproductions for mechanical, mercantile, industrial, architectural, commercial and general business purposes, as well as for high-grade display and advertising functions. Photographic reproductions from the Johnson studio are extensively used in the depicting of samples for traveling salesmen and also as matters of record in connection with patented devices and the general files in varied industrial and commercial institutions. All work is issued with promptness and stands as the acme of excellence, as all details are in the hands of a corps of expert assistants employed by Mr. Johnson and working under his direct supervision. For more than a decade Mr. Johnson has turned out a varied and ever increasing amount of photographic work for the great Chicago mail-order houses of Montgomery, Ward & Company and Sears, Roebuck & Company, as well as for other important mail-order institutions and for a large number of leading wholesale houses. Special attention has been given to the photographic reproduction of all kinds of machines and machinery parts and accessories, for illustrative work in catalogues, trade journals and other publications. The facilities of the Johnson studio include also the best of provisions for the calling-out work in the making of interior, exterior and birdseye views

of all kinds of manufacturing plants, and this department of the enterprise is one of no minor scope and importance.

Mr. Johnson is the inventor of an improved Tungsten lamp, of special nitrogen device and constructed of aluminum. This superior lamp has met with unqualified favor in connection with commercial photography, and he has developed a substantial enterprise in the manufacturing of these lamps for sale to the general trade. Success has come to him not less through ability than intensive application, and he has become a recognized leader in commercial photography.

W. A. KENNEDY PATTERN WORKS

For the manufacturing of metal and wood patterns of all descriptions for industrial application, this concern has the most modern facilities in its well equipped establishment, at 216-18 South Fifteenth avenue, in the suburb of Maywood. Special attention is given to the production of machine and hand molds, master patterns, core boxes, sweeps, match and stripper plates, experimental patterns and models, and wood specialties and miscellaneous models and patterns for all manner of industrial purposes. This new and model plant was established in 1917, at its present location, and the founder of the business, William A. Kennedy, later admitted to partnership his present valued coadjutor, Roy Simonsen. The Kennedy Pattern Works utilize somewhat more than three thousand square feet of floor space and the mechanical equipment of the establishment includes the most approved types of modern tool and machinery for the facile and expert production of patterns and models of either wood or metal and in any desired size. From this plant has been turned out within the short period of its existence some of the most important and mechanically interesting work produced by any similar concern in the metropolis industrial district of Chicago. One of the most interesting and important commissions recently entrusted to this firm has been that involving experimental work and the manufacturing of patterns incidental to the designing and building of the "Republic" special military tractor, of the caterpillar type, which is now being manufactured by the Republic Motor Truck Company, of Alma, Michigan, for the use of the United States war department. These important patterns were turned out in the Kennedy shops and under the personal supervision of the Italian inventor, a celebrated motor engineer. It may further be said that the result is the manufacturing by the Republic Company of the largest internal-gear driven tractor in the world. The Kennedy shops have been the stage also of much important work in the designing and construction of specially large lathe and planer patterns for the Amalgamated Machinery Corporation. Another noteworthy contract here carried to successful completion was that of casting patterns and diamond floor-plate work to be utilized in the construction of a United States arsenal by the American Bridge Company. The firm has done in its line also excellent pattern work for the American Can Company, as well as for the American Steel Foundries Company, of South Chicago and East St. Louis; work for the W. A. Jones Foundry Company, of Chicago; for the Hanke Iron & Wire Works, of this city; and for such other and representative local clients as the

Phoell Manufacturing Company, the Angell Steam Specialties Company, the McDonald Machine Company, the Sturges & Burn Company, the Universal Engineering Company, the Hewitt Manufacturing Company, the Vierling Machine Company, the National Malleable Castings Company, the Mudge Railway Supply Company, Foote Brothers Gear & Machine Company; Shank Manufacturing Company, the Meyercord Company, Greyton-Crumford Company, and many others.

In the Kennedy Pattern Works is retained a force of ten skilled workmen and Messrs. Kennedy and Simonsen likewise give to the business their undivided attention.

William A. Kennedy has been identified actively with his present line of industrial enterprise during his entire business career, and his initial service began when he was a mere boy. He is a recognized expert and authority in industrial pattern and model making and prior to engaging in business in an independent way he had been for more than ten years in charge of the pattern department of the National Malleable Castings Company, at Maywood.

Mr. Simonsen, junior member of the firm, learned the trade of patternmaking in the plant of the National Malleable Castings Company and had been employed in other important foundries prior to becoming associated with Mr. Kennedy, as previously noted in this context. His experience has been varied and has given to him the technical ability that makes him a resourceful force in upholding and expanding the reputation for efficiency that is held by the firm of which he is now a principal.

CHICAGO GRANITINE MANUFACTURING COMPANY

Among the manifold manufacturing industries of unique order that are centered in Chicago is that of the company whose title initiates this review and the headquarters of which are established at 3617-23 Wall street, in the celebrated Central Manufacturing District. The business was established in 1906, by Joseph A. Washick, who is now president of the company and under whose able and progressive management the substantial enterprise has been developed. The company is incorporated under the laws of Illinois and in addition to being its executive head Mr. Washick is also its treasurer, Robert Grogan being secretary. The company manufactures an improved line of granitine laundry tubs, kitchen sinks, water troughs for farm use and other specialties of similar order, and the products of the factory are sold extensively throughout the territory normally tributary to Chicago as a distributing center. The building occupied is a brick structure of one story, and is one hundred and seventy by one hundred and ten feet in dimensions, with direct transportation facilities through the medium of the Chicago Junction Railway.

JOSEPH A. WASHICK

The president of the Chicago Granitine Manufacturing Company takes pride in claiming the western metropolis as the place of his nativity and in his activi-

ties as a business man and loyal citizen he has exemplified thoroughly its progressive spirit. Mr. Washick was born in Chicago on the 25th of September, 1872. His early educational advantages included those of the public schools and a local business college, and after his school days he was employed for a time in the passenger department of the Pennsylvania Railroad. Later he was identified with railroad construction activities and in 1906 he initiated his independent business career by founding in a modest way the enterprise which has been developed into the present large and prosperous business of the company of which he is president.

Mr. Washick is one of the appreciative and popular members of the Central Manufacturing District Club, the Chicago Press Club and the Beverly Country Club, in which last mentioned he manifests in a practical way his enthusiastic interest in golf. He is affiliated with the Masonic fraternity and the Benevolent & Protective Order of Elks.

ERVIN A. RICE COMPANY

In the manufacturing and packing of mince meat and other fruit products this concern has established a high reputation and has extended its trade into all sections of the United States, the popular products being of the highest grade and being sold in leading mercantile establishments in the various states of the Union. The modern factory, perfect in sanitary provisions and in the general equipment, is located at 2232 South LaSalle street. The business was founded in 1896 and two years later was incorporated under the present title, the personnel of the original corps of officers having been as here designated: Ervin A. Rice, president; J. C. Nielsen, vice-president. In its corporate charter the new company designated its functions as preserving and packing mince meat and fruit products, and during the intervening years special attention has been given to the manufacturing of a special brand of New England mince meat, besides which the concern prepares products that are issued under the private brands of representative jobbers and wholesale dealers. In the early stages of the operation the company employed only ten persons in its factory and occupied only five thousand square feet of floor space. Through the efficiency of organization and the high-grade products the company has grown to be one of the most important in its special field of manufacturing to be found in the United States, and in the factory, with its fifty thousand square feet of floor space, employment is given to an average force of seventy-five persons, an equal area of floor space being provided also for storage of raw materials and the finished products. Each successive season the company manufactures and places on the market an average of five million pounds of high-grade mince meat, the same being manufactured according to an exact scientific formula and under conditions that insure absolute purity and even grade in the product. Keeping in close touch with the best commercial policies and progressive ideas, the company has membership representation in the Illinois Manufacturers' Association and the Chicago Association of Commerce.

On the 5th of April, 1917, J. C. Nielson, the vice-president and general man-

ager of the corporation, purchased a controlling interest in the stock of the company. A. W. Nielson is secretary and treasurer.

R. D. KING

Of paramount importance in connection with industrial developments and progress is the interposition of the skilled and efficient mechanical engineer and designer, and as an exponent of this important functional service Mr. King has conceded precedence as the leading representative of his profession in Chicago, his offices being in suite 1620-22 Monadnock building. His reputation in the designing and developing of automatic and special machinery for all manner of industrial purposes has transcended mere local limitations and made him a recognized authority in his field of professional endeavor as touching the entire United States. He has done important work for manufacturers in all parts of the Union and his clientage has long been of broad and representative order. Mr. King designed the special machinery required in the production of "Nickeloid," or nickel-plated zinc, as manufactured by the American Nickeloid Company, of Peru, Illinois, which corporation was the first to produce this product in the United States.

For two years Mr. King was associated with the designing and experimental department of the great typefounding house of Barnhart Brothers & Spindler, of Chicago, the largest concern of its kind in the United States, and in this connection he developed much of the modern mechanical equipment now used by this concern, besides developing also the designs of the type-casting machines now commonly employed in the manufacturing of printing type. Mr. King worked out the manufacturing processes and the requisite machinery for the making of the hollow-wire, self-fluxing solder manufactured by the Chicago Solder Company. Another important industrial achievement made by him was in the designing of automatic machinery for the tipping of tin cans, and these machines are now almost uniformly used in all canning plants. Along the same line was his developing of automatic machinery for can filling, this work having been done for the Wildi Evaporated Milk Company, of Columbus, Ohio. He invented and developed the coin controlled lock manufactured by the Coin Controlled Lock Company, for use in cabinets in washrooms of railway stations, hotels, etc. He was the inventor of a key-cutting machine by the utilization of which nine hundred and twenty thousand keys can be duplicated without retaining an original duplicate, this remarkable machine being now in commission in the extensive plant of the Coin Controlled Lock Company, of Chicago.

He also invented and perfected the clock now marketed by the Chicago Watchmans Clock Co., of Chicago. This clock has been approved by the Board of Underwriters and pronounced by them to be the most efficient device of its kind on the market.

Mr. King has recently invented and patented a toggle pressure attachment for punch presses which is especially effective in the drawing of metal shells where it saves operations and breakage. This device he is now manufacturing and marketing.

For four years Mr. King maintained professional alliance with the Addressograph Company, of Chicago, in the designing and experimenting departments, and within this interval he perfected machinery for the making of letters in printing plates, besides perfecting appliances for handling and addressing envelopes. He assisted Pierce Brothers in the perfecting of the Pierce wrapping machine described on other pages of this publication. He gave similar service in perfecting automatic spraying machinery for the Paasch Air Brush Company, of which corporation specific mention is made elsewhere in this work. His professional talent came equally into evidence in the developing and designing of special tools and machines to be used in the production of the spring hinges manufactured by the Allith-Prouty Company, Danville, Illinois. He perfected the adjustable ice skate manufactured by Conron-McNeal Company, of Kokomo, Indiana. He designed the devices and automatic machinery used in the manufacture of an improved electric meter, having perfected an automatic attachment whereby the user can insert a card and have the "reading" of the meter automatically printed thereon.

Mr. King has further distinction,—one of significant order at the present time, when the United States has become actively involved in the great world-war,—as having designed dies and special automatic machinery for the making of cartridge clips in one operation, this work having been done for the Greist Manufacturing Company, of New Haven, Connecticut, and the mechanism being used in connection with the manufacturing of cartridges utilized in war service by the United States and its allies. He has developed and perfected hundreds of special machines, dies, tools, etc., in the improving of manufacturing processes and systems, and is a recognized authority on efficient and economical factory production.

Mr. King maintains finely equipped drafting rooms and a corps of skilled assistants. He has confidential relations with a number of the leading Chicago model-building and experimental machine shops and laboratories, the facilities of which he uses with discrimination, the while he never fails to protect fully the interests of his clients. He has an exceptionally thorough knowledge of patent-office work and requirements and has made a close study of inventive progress and industrial history. Through his attorneys, he has taken out patent papers for more than a hundred clients to whom he has assigned the rights when the patents were granted.

On several inventions of his own Mr. King has secured patents, and these devices, now extensively manufactured and distributed, yield to him handsome royalties. In addition to the industrial concerns mentioned in preceding paragraphs, the large and important clientage of Mr. King has included many others of equal importance, and among the same may be noted the following named: Strand Machinery Company, Reliance Die & Stamping Company, National Meter Company, Weydell Pattern Works, Leland S. Rapp & Company, F. B. Redington & Company, Louis Kreiter & Company, Climax Cream Separator Company, Goedde Pattern Works, M. McFarlane & Company, all of Chicago; Lippert & Rhenstrom, Kenosha, Wisconsin; Apollo Metal Works, LaSalle, Illinois; the Post Company, Waterloo, Iowa; and the Muskegon Tool & Stamping Company, Muskegon, Michigan.

R. D. King was born at Manchester, Iowa, on the 16th of October, 1877, and is

R. D. KING

a son of J. F. and Mary (Bush) King. In his native place he continued his studies in the public schools until he had completed the curriculum of the high school, and thereafter he took complete courses in mechanical, electrical and structural engineering. After thus completing his technical education he was for four years employed as a mechanical draftsman in the establishment of Porter & Company, of Chicago, and the ensuing two years marked his association with Barnhart Brothers & Spindler, as noted in a preceding paragraph. The next year he was employed by E. Goldman & Company, during the ensuing year he was associated with the E. E. Flora Engineering Company, and for four years thereafter, as previously noted, he was allied with the Addressograph Company. He was for six months associated with F. B. Redington & Company, in solving special problems pertinent to automatic machinery, and under special contract he thereafter was engaged in important work with the Union Stopper Company, of Morgantown, West Virginia; the Art Bedstead Company, of Chicago; the Physicians' Drug & Chemical Company, of this city, and others. Since 1907 he has been successfully established in the independent work of his profession and has consecutively maintained his office headquarters in the Monadnock building, at the corner of Jackson boulevard and Dearborn street.

THE SIMMONS BOAT COMPANY

Under this title is conducted one of the unique and important industrial enterprises of Chicago, and the large and well equipped manufacturing establishment is one of the largest of individual ownership devoted to the producing of watercraft of the highest grade that is to be found between the two coasts of the United States, the business being now owned in its entirety by J. E. Simmons, who is widely known as one of the representative ship architects and designers of the country, with a high reputation in maritime circles of both oceanic and Great Lakes prestige.

The business of the Simmons Boat Company was founded on the site of the present large manufactory in the year 1913, and the original owner of the same was W. T. Warren, the present sole proprietor, Mr. Simmons, having assumed control of the business in May, 1916, his able and progressive management having brought about a thorough vitalizing of the enterprise which has thus increased greatly in scope and importance under his administration.

The manufacturing plant is on the north branch of the Chicago river, at Rockwell street and Irving Park boulevard, and the site comprises about five acres, including slips, wharves, etc. The large warehouse, of steel construction, is two hundred by two hundred and fifty feet in dimensions, and the factory building is a brick structure fifty by one hundred and forty feet in dimensions. This latter building is supplied with the best modern equipment of woodworking machinery and all requisite mechanical accessories, and here facilities are afforded for the manufacturing of the finest types of pleasure and business boats, including steam yachts, motor boats, etc., as well as fine craft of minor type. Mr. Simmons has had twenty years of practical experience as a ship architect and designer and prior to assuming control of his present business he had been

engaged actively in the same line of productive enterprise at Lake Geneva, Wisconsin. He has constructed pleasure and business steamers, yachts of all sizes, racing boats, express cruisers from forty feet upward, fast runabouts of from twenty to forty feet, yacht tenders and all kinds of small boats. This experience, as a matter of course, admirably fortified him for the management and control of his present extensive establishment, in which craft of these various types are turned out under the most favorable auspices, the manufacturing plant being the largest of the kind in the state of Illinois and taking high rank among the leading boat yards between the two oceans. In the factory is employed a force of skilled workmen, and every craft turned forth by the Simmons Boat Company represents the best type of modern boat building.

Mr. Simmons' activities as a boat builder at Lake Geneva covered a period of eighteen years, and within this time he gained high reputation and definite fame in his chosen sphere of enterprise. He has designed and constructed a number of fast sailing yachts and racing boats, and among the latter may be mentioned the celebrated "Disturber IV" and the "Black Point." For the late Judge Nathaniel C. Sears, of Chicago, Mr. Simmons designed and built a fine steamer that was a notable acquisition to the admirable flotilla of Lake Geneva, and another fine boat of similar order was that which he built for the late George D. Barnard, of Chicago. He has executed important commissions also for John Borden, the gallant Arctic explorer; for ex-Senator William Lorimer; for Richard T. Crane, George F. Harding, Commodore James A. Pugh, of the Chicago Yacht Club, Andrew McGann, Archibald Andrews, E. V. Noyes, Charles Steele, of Waukegan and Commodore Bliss, of the Green Bay Yacht Club, of Green Bay, Wisconsin. He has designed and built innumerable smaller craft for yachtsmen and other aquatic sportsmen in the most diverse sections of the United States, and many of his boats have appeared in the ports of foreign lands. Mr. Simmons has a national reputation in his chosen profession as a designer and constructor of fine craft, holds active membership in various professional organizations of representative order and is a prominent and popular member of the Chicago Yacht Club. He keeps in close touch with yachting affairs in general and misses no opportunity of attending yacht races of important order, as well as meetings of yachtsmen and ship builders. Personally and professionally Mr. Simmons proves a notable acquisition in the marine circles of the Great Lakes and the industrial life of Chicago.

HOLLATZ BROTHERS MANUFACTURING COMPANY

There are many minor municipal centers that have gained special precedence in certain specific phases of manufacturing, but while in Chicago are found large and important industrial institutions of such specific order, yet so gigantic and varied are the city's manufacturing enterprises that the individualities of all are measurably obscured, though each successful and properly conducted enterprise contributes its share to the great industrial supremacy of the western metropolis. In the domain of furniture manufacturing the concern above noted has gained a place of no insignificant precedence, and the

Hollatz brothers have shown themselves to be men of splendid initiative and constructive ability, progressiveness and commercial probity. Their well directed activities have enabled them, from a small beginning, to build up a large and substantial business, and their well equipped factory is essentially modern in all respects, with ample facilities for accommodating the constantly expanding trade.

In 1899 four brothers, Ernest, Louis, Herman and Paul Hollatz, formed a copartnership and engaged in the manufacturing of furniture, their original factory being an unpretentious establishment in the loft of a building at the corner of Rees and Halsted streets. In the early stages operations were confined almost entirely to the manufacturing of couches, but with cumulative success the province of the enterprise was expanded to include the manufacture of high-grade rocking chairs and parlor furniture. The little shop in which operations were initiated contained less than five hundred square feet of floor space, and each of the brothers applied himself vigorously and efficiently to the practical details of manufacturing, each being a skilled artisan either as an upholsterer or cabinetmaker. Unremitting application during longer than the customary working hours marked the efforts of the brothers in building up their business, and such was the excellence of productions and the efficiency of general service that the enterprise was successful from the start. Within a year it was found necessary to obtain larger quarters, the demand for the products of the little factory having so increased as to require the employment of twelve assistants. In the autumn of 1899 the factory was removed to the corner of Robey and Kinzie street, where was effected the lease of a two-story building that afforded thirteen thousand square feet of floor space in addition to the basement. In this building operations were successfully continued for the ensuing two years, with Ernest Hollatz as the principal director of the commercial department of the business. Continued success is the best criterion of merit and ethical legitimacy in the field of manufacturing, and the consecutive advancement made by the Hollatz brothers offers best assurance of the unequivocal success that has attended their earnest and well ordered efforts.

In 1901 the Hollatz Brothers purchased property on Claremont avenue and with frontage at 2315 West Grand avenue. Before the close of the following year they had erected on this site a modern industrial building designed specially for the accommodation of their manufacturing enterprise. The new plant afforded an aggregate floor space of more than five thousand square feet, the building being three stories in height and the average number of employes in the newly equipped institution being about thirty-five. In 1905, so substantial had been the increase in the business, it was found practically imperative sixteen thousand five hundred square feet of extra floor space. By degrees the force of employes was increased to an average of one hundred persons, and in to enlarge the manufactory, and at this time was erected an addition that gave 1912 the plant was further amplified by the erection of a three-story building which gave an aggregate floor space of eighteen thousand square feet. The gross area of the floor space of the entire plant is now fifty thousand two hundred and fifty square feet, and the mechanical equipment and other facilities of this manufactory are of the best modern type in all departments. The company's trade now extends into the most diverse sections of the United States, six traveling

salesmen being employed, besides one city salesman in Chicago. Through careful and honorable policies and the production of high-class output from its factory, this company has developed a substantial and important industrial enterprise.

THE ELECTRIC STEEL COMPANY

Organized for the purpose of manufacturing of steel castings, alloy steel and a diversified line of steel products, this company was incorporated under the laws of Illinois in the year 1915, and the corps of executive officers has since remained the same as at the inception, its personnel being as follows: Charles Piez, president; John M. Olmstead, vice-president and general manager; and P. L. Coonley, secretary and treasurer. In addition to these executives the directorate of the company includes also W. C. Frye and C. R. Messinger. The president of the company being also president of the Link Belt Company, representing another of the important industrial enterprises of Chicago.

After perfecting its organization the Electric Steel Company purchased four acres of ground at the southwest corner of Thirty-first and Wood streets, and on this site erected a modern foundry building which occupies one acre of ground. The remarkably substantial business that has been developed by this new and vigorous industrial corporation has been the result alike of the superiority of products and the progressive and careful policies brought to bear. The output of the company's foundry for the first year aggregated about one thousand tons, with a force of about fifty men employed. The splendid advancement that has been made in the comparatively brief intervening period is indicated by the fact that the average output of products now approximates more than four thousand tons annually and by the fact also that to insure this result is necessitated the employment of a working force of about one hundred operatives, many of whom are specially skilled in their respective departments of service. The company figures as the pioneer in the production of electric-process steel casings in the Chicago field, and no piece of work is permitted to go forth without measuring up fully to the high standard set by the concern's principals. The foundry began operations with a single unit of electric furnace equipment, and the production from the same was limited to one ton daily. Results proved both to the company and the trade the unquestionable superiority of the electric castings, which are notable for their homogeneity and freedom from blow holes, and which thus surpass in excellence products gained through the medium of any other accepted process. The foundry of the company is now equipped throughout with the electric furnaces and the products have gained the unqualified commendation of manufacturers requiring castings of the maximum strength, endurance and flawlessness. The company has membership in the National Foundries Association and the Illinois Manufacturers' Association.

John M. Olmstead, vice-president and general manager of the Electric Steel Company, was born in Germany, in 1879, the father having gone to Germany with his wife for the purpose of taking a special post-graduate course of study in famed old Heidelberg University. John M. Olmstead was brought by his mother to the home in America within a year after his birth, and his early

educational advantages were those afforded in the public schools of Buffalo, New York. This discipline was supplemented by a preparatory course in Phillips Exeter Academy, at Exeter, New Hampshire, and after leaving this historic old institution he entered Harvard University, in which he was graduated as a member of the class of 1902 and with the degree of Bachelor of Arts.

After leaving the university Mr. Olmstead became identified with the agricultural implement business, with which he continued his active association about twelve years. In this connection he gave much thought and study to mechanical matters and acquired a comprehensive knowledge of the results demanded in the production of steel castings, especially those used in the manufacturing of high-grade machinery. It is needless to say that this knowledge proved of great value to him when he identified himself with the thriving industry of which he is now the general manager. He is a member of the Central Manufacturing District Club and of the Harvard Club of Chicago.

MME. MARIETTE COMPANY

Under the conjunctive titles of the Mme. Mariette Company and the Lorette Corset Company is conducted one of the well ordered and important corset-manufacturing enterprises of Chicago, and the well equipped manufacturing plant of the conjoined companies is established at 500 South Throop street, where is now utilized an aggregate floor space of forty thousand square feet and where employment is given to a force of four hundred operatives.

In 1906 Theodore Schottlander, a man of broad and thorough technical experience in this line of manufacturing enterprise, effected the organization of a stock company that was incorporated under the laws of Illinois for the purpose of manufacturing corsets, the titles given to the products being the Madame Mariette and the Lorette brands of corsets, and this leading to the adoption of the dual corporate name. The original factory was established in the building at the corner of Dearborn and Madison streets where requisition was made for three thousand square feet of floor space and where the initial force of employes comprised five young women. Mr. Schottlander was well fortified in experience when he thus established the new enterprise, as he had previously been associated with the well known New York corset house of Winegarten Brothers, with that of George C. Bachelor & Company of Bridgeport, Connecticut; and with the American Lady Corset Company of Detroit, Michigan. His experience had thus covered a period of ten years and he had gained definite knowledge of the conditions of the corset trade and had full recognition of the demands that would attend the development of a new enterprise in this line. He thus had no difficulty in effecting a successful introduction of his high-grade products to the trade, and the business, conducted along efficient and progressive lines, rapidly expanded in scope and importance. Prior to 1913 demand for larger quarters had twice required the removal of the factory, and in the year mentioned possession was taken of twenty thousand square feet in the modern building at 500 South Throop street, where the most approved mechanical equipment was installed and facilities provided for the efficient handling of the large volume

of business. Under most favorable executive and productive auspices the business continued to expand in a most substantial and gratifying way, and in 1916 it became imperative to augment the factory accommodations. Under these conditions another twenty thousand square feet of floor space was added, and with the incidental provision of added machinery and accessories the capacity of the factory was virtually doubled. The establishment is now operating to full capacity limit in supplying the appreciative demand for the high-grade corsets manufactured, the same establishing the highest modern standard and the products being sold to the jobbing and retail trade throughout the United States and the Canadian provinces, besides which a substantial export trade is being developed in South American countries. Branch sales and supply rooms are established in the cities of New York and San Francisco. In order most efficiently to produce the popular corsets manufactured by this dual corporation it was found expedient to design and place in commission several special machines, and many features of the same are covered by patents, as are also special features of the designs of the Mme. Mariette and Lorette corsets, all types of which represent the best in design, workmanship and attractiveness as well as in construction according to scientific principles. The company has membership in the National Corset Manufacturers' Association, Mr. Schottlander being president of the corporation, as previously noted, and L. P. Keller being its secretary and treasurer.

Theodore Schottlander was born and reared in Germany, and there he learned the details of corset manufacturing by serving a practical apprenticeship in the factory conducted by his father, his apprenticeship having been initiated when he was a lad of sixteen years. In 1897 he came to the United States and a few years later founded the business of which he is now the executive head. He has gained recognition as one of the vigorous and progressive business men of the western metropolis and as a loyal and public-spirited citizen. He gains his principal recreation through the use of the automobile and is a popular member of the Chicago Motor Club.

L. P. Keller, secretary and treasurer of the Mme. Mariette Company and the Lorette Corset Company, was born in Germany, where he received his early educational discipline and where, at the age of seventeen years, he began his apprenticeship in connection with corset manufacturing. In 1907 he came to America and prior to assuming, in 1912, his present business alliance, he had operated several corset shops in Chicago. His technical and executive ability has contributed much to the furtherance of the successful manufacturing enterprise with which he is now identified.

HOME STOVE WORKS

One of the extensive and important industrial concerns that add materially to the commercial precedence of Chicago is that whose corporate title initiates this paragraph, the large and well equipped manufacturing plant of the company being established on West Eighteenth place, with offices at 2622, that thoroughfare. The business was established in 1886, as the Home Iron Works, and the

primary function of the new institution was the manufacturing of stoves. In 1888 the business was incorporated under the present title, and with a capital stock of twelve thousand dollars. The original factory occupied a portion of the site of the present extensive plant, and operations were instituted on a modest scale, commensurate with the capitalistic reinforcement. There has been naught of the static element in the history of this old established corporation, whose record has been one of continuous growth and expansion. At the present time the plant of the Home Stove Works occupies about one hundred and twenty-five thousand square feet of ground space, and the buildings afford an aggregate floor space of about two hundred and fifty thousand square feet. The splendid development that has attended the enterprise may be gauged by the fact that operations are now based on a capital stock of two hundred and fifty thousand dollars and that employment is given to two hundred and twenty-five persons. The policy of the corporation has been from the start what may be termed conservative progressiveness, implying normal and legitimate methods that have made for solidity and permanency. The functions of the Home Stove Works are exclusively in the manufacturing of highgrade ranges and heating stoves, and a specialty is made of the production of the "All-Ways Home" combination range, which gives equally effective service with artificial gas, hard or soft coal, coke or wood for fuel. This has been consistently pronounced the "most practical and successful coal and gas range that has ever been constructed, the company owning the patent on the mechanism, which was invented by G. W. Clark, secretary of the corporation. Of the operation of this special oven through the medium of gas the following brief description has been given: "Our patented gas oven burner is the most perfect oven burner that has ever been made. It will heat the oven quickly, economically and uniformly. The burner is attached to a cast-iron baffle plate which is of sufficient weight to withstand a very intense heat. To prepare the oven for use with gas, simply slide in the burner and turn on the gas. In making this change there are no dampers or slides to operate and there is absolutely no possibility of mistakes or explosions. The entire change may be made in a few seconds. A place to keep the oven burner when not in use is provided in the base of the stove. The supply of gas is taken from the main manifold in the rear and is conveniently regulated with a handle that is mounted on the front of the stove." From one of the ornate catalogues issued by the company are taken the following pertinent extracts:

"We have been manufacturing and constantly improving 'Home Stoves' for over a quarter of a century, and we have been successful in maintaining year after year the good will of our loyal customers, by producing a product satisfactory in both quality and price. Our patterns are practically all new, embodying the very latest ideas in construction and design. Home ranges and heaters are of the highest quality and of mechanical perfection, being constructed under the close supervision of practical and competent men. All Home stoves are made from a special blend of selected southern iron combined with northern iron of superior strength, thus producing an exceptionally strong and lasting casting. Our pig iron is all chemically analyzed and the different proportions entering into our cupola mixtures are determined very carefully by expert calculations based on daily analysis of our mixture. Our methods and equipment are most careful and complete.

The Home ranges and heaters are manufactured in many different sizes and "Home" trademark is a recognized evidence of superiority. The trade of the designs, with the most modern accessories and general provisions, and the Home Stove Works extends into all parts of the United States, as well as into Canada, Mexico and foreign countries. Though the trade has become widely disseminated it is largely done through the medium of large concerns dealing in household furnishings, and the export business is merely of incidental order, based on a popular appreciation of the high-grade products. This is the second largest stove manufacturing concern in Chicago, and every detail of manufacture is given attention in the foundries and general factory of the corporation. The personnel of the official corps of the company is as here noted: H. R. Page, president; George M. Page, vice-president and treasurer; and G. W. Clark, secretary.

GEORGE M. PAGE

The vice-president and treasurer of the Home Stove Works was born in Chicago on the 8th of November, 1880. He received the best of educational advantages, including those of Culver Military Academy, on Lake Maxinkuckee, Indiana, and Purdue University, at Lafayette, that state. After leaving school he was for three years employed in the Central State Bank at Jackson, Michigan, and in 1909 he became sales manager for the Home Stove Works. Upon the death of W. H. Joyce, treasurer of the corporation, Mr. Page succeeded to this office, and since January, 1917, he has held also the office of vice-president. He has the general supervision of the offices and manufactory and under his vigorous and progressive administration the business is showing a substantial expansion. He is affiliated with the Sigma Chi college fraternity.

J. W. JOHNSON CO.

As one of the leading industrial concerns of its kind in the United States the J. W. Johnson Co., with a history covering a period of more than forty years, has gained its present high rank and conceded priority through the efficiency of service rendered and through holding to the highest commercial ethics in all its transactions. The company controls an extensive business in the manufacturing of and dealing in canvas goods of all kinds, including tents, awnings, water-proof covers, etc., and the large and modern manufacturing plant is established at 1231-47 Macedonia street. This history of this substantial industry is one of interesting order, its founder, John W. Johnson, a native of Norway, having in his young manhood held to the occupation that gave ancient prestige to his remote Viking ancestors in the far Norseland, for he early turned to a sea-faring life and became a sailor before the mast. Mr. Johnson finally severed the ties that bound him to his native land and determined to seek his fortunes in the United States. He came to Chicago in 1871, a short time before the greatest urban fire in the annals of history brought this city prostrate in ashes, and here his first

employment was at carpenter work, for which order of service there was pressing demand in the valiant work that was forthwith instituted in rebuilding the fireswept city. Incidental to his service as a practical seaman Mr. Johnson had acquired familiarity with the handling of canvas, as in his native land he had done no little work as a sailmaker. His alert mind caused him to realize that in Chicago was offered at this time a good opportunity to develop a business in the manufacturing of canvass awnings, and, with the effective assistance of his devoted wife, he began the manufacturing of awnings, operations having been initiated on a very modest scale, as is evident when it is stated that it was done by Mr. and Mrs. Johnson at their home, on Hubbard avenue. Success attended the enterprise from the start, and finally factory accommodations were obtained at 46 Wells street (old numbering), where Mr. Johnson rented twelve hundred square feet of floor space in a building, the entire three stories of which he subsequently acquired to meet the demands of the constantly growing business, the functions of which soon became the manufacturing of awnings and other canvas products for the wholesale trade exclusively. At the Wells street quarters operations were continued by Mr. Johnson for the long period of thirty years, and in the meanwhile, through his earnest and well ordered endeavor he had gained precedence as one of the successful and representative manufacturers of his adopted city. In preparation for the future growth of his business Mr. Johnson had purchased the site of the present factory, on Macedonia street, and here he completed in 1902 the first of the four substantial and modern industrial buildings that now constitute the manufacturing plant of the J. W. Johnson Co. This first building, at 1247 Macedonia street, is three stories in height and gives seven thousand square feet of floor space. The annex structure later erected at 1245 Macedonia street affords fifteen thousand square feet of floor space, and later was erected a building of four stories, with aggregate floor area of ten thousand square feet. The last building is at 1235 and 37 on the same street and is three stories in height, with fifteen thousand square feet of floor space. The institution as an entirety now gives for the use of the company a total of fully forty thousand square feet of floor space. The number of employes retained by the company is about one hundred normal and the annual business of the concern now averages more than five hundred thousand dollars, the products of the factory being sold almost exclusively through the territory of the middle west and sales being made entirely to the wholesale and ship-chandlers trade.

It is not the purpose of this publication to atempt detailed description of the products of the various representative manufactories here given recognition, but consistently may be designated briefly the general character of the widely diversified products manufactured under the trademark of this company, said trademark having become recognized as a guaranty of excellence in quality and workmanship. The company manufactures window and store awnings, porch curtains, paulins and covers, automobile covers, waterproof covers specially designed for various purposes: wagon and haycock covers, tents of all styles and sizes, coal and feed bags, horse covers and clothing, hammocks, water bags, conveyor canvases, including binder canvases to fit all standard harvesting machines and heading machines, camp furniture, etc. For winter use the Johnson products set the highest standard of excellence in lumbermen's storm blankets for horses, stable blankets, etc. Special attention is given also to the manufacturing of

water-proof canvas horse-covers and a large and varied line of protecting covers of canvas. The catalogues and bulletins issued by the company give adequate description and specifications concerning all products.

In 1907, in consonance with commercial expediency and progressiveness, Mr. Johnson effected the incorporation of his business, with a capital stock of seventy-five thousand dollars, and, after years of earnest and fruitful effort he has felt himself entitled to retire from the more active executive direction of the business, though he continued as president of the company, his two sons having assumed the active management and in this connection being so fortified as admirably to uphold the sterling honors and the industrial prestige of the family name, John W. Johnson, Jr., being vice-president of the company, and Lawrence E. Johnson its secretary and treasurer.

JOHN W. JOHNSON

John W. Johnson, the honored founder of the important industrial enterprise of which description is given in the foregoing paragraphs, was born at Stavanger, Norway, on the 3d of July, 1844, and there he received his youthful education, though he left school while still a lad, to begin his practical service with those who "go down to the sea in ships." He continued following the life of a sailor until he came to the United States, and in the spring of 1871, a few months prior to the great Chicago fire, he established his home in this city, where he entered the employ of the ship-chandlery firm of Perrigton & Scranton. After the historic fire Mr. Johnson worked at the carpenter trade in connection with rebuilding of the prostrate city, and with this line of service he continued his association until he founded the business now conducted by the J. W. Johnson Co., due record of his career since that time being incidentally given in the preceding article. Mr. Johnson has ever manifested deep appreciation of and loyalty to the city in which he has achieved large and worthy success, and his political allegiance is given to the republican party. A man of well fortified convictions and broad mental outlook, he has stood exponent of the best in loyal citizenship and as a man of sterling character commands the unqualified esteem of all who know him.

JOHN W. JOHNSON, JR.

John W. Johnson, Jr., vice-president of the J. W. Johnson Company, was born in Chicago in 1871, and he continued his studies in the public schools until he had duly profited by the advantages of the high school. At the age of sixteen years he found employment in a printing establishment, but within a short time thereafter he became associated with his father's business, with every detail of which he familiarized himself in the passing years, so that he was well fortified when he assumed active executive duties at the time of the incorporation of the business, in 1907, since which year he has held the office of vice-president of the company.

J. W. JOHNSON

J. W. JOHNSON, JR.

L. E. JOHNSON

Mr. Johnson is a republican in politics and is actively affiliated with the Masonic fraternity, including Knights Templars and Medinah Temple of the Mystic Shrine.

LAWRENCE E. JOHNSON

Lawrence E. Johnson, secretary and treasurer of the J. W. Johnson Co., was born in Chicago on the 16th of November, 1876, and after leaving the public schools he completed an effective course in the Metropolitan Business College. His initial business experience was gained through his service as a clerk in the office of a mercantile agency in Chicago, and later he began, like his older brother, a thorough working service, or virtual apprenticeship, in connection with his father's manufacturing enterprise, his alliance with which has continued without interruption. He has been secretary and treasurer of the J. W. Johnson Co., from the time of its incorporation, in 1907, as noted in a foregoing article descriptive of the business. His Masonic affiliations include membership in Medinah Temple of the Ancient Arabic Order of the Nobles of the Mystic Shrine, and he is affiliated also with the Royal Arcanum. He and his brother represent their company as active members of the Chicago Association of Commerce, the Illinois Manufacturers' Association and the Rotary Club of Chicago.

ARTHUR G. JOHNSON

Arthur G. Johnson, general superintendent, was born in Chicago, September, 1883. After completing his education he entered the employ of the J. W. Johnson Company, in the sales department. Close application to the interests of the company and attention to the needs of the trade resulted in his being made superintendent in 1916, which position he has held with credit to himself and profit to the company. Mr. Johnson is affiliated with, and a popular member of the Elks.

D. C. HUGHES & COMPANY

In order to meet the constantly increasing demands for the high-grade and distinctly original and artistic products manufactured by this company it has recently been found essential to provide facilities that will treble the output, the celebrated "Electro" line of electric percolators, toasters, flatirons, stoves, automobile accessories and special machinery. To permit this expansion in consonance with legitimate commercial expediency the company has increased its capitalization and has placed a certain amount of its intrinisically valuable stock, both preferred and common, on the market in a distinctly non-speculative way. The enterprise is based on a capital stock of one hundred thousand dollars; the manufacturing plant, with the most modern equipment, is located at 4642 Ravenswood avenue, on the Chicago & Northwestern Railroad, and the growth of the

business has been remarkable, though of the most stable order. Thus it may be noted that the sales for nine months of the inceptive year 1913 aggregated six thousand dollars, while seven months of the year 1917 gave a record of $42,508.91. Under date of August 15, 1917, the president of the company issued a most interesting and authoritative circular letter in which he notes that within four years the business, as shown in actual figures, has grown from six thousand dollars a year to more than eight thousand dollars a month. In this letter the president predicates the tremendous expansion of the business as being due to three fundamental facts, which are thus stated: "1st. The increase in the use of electricity in the home for all purposes,—in small towns as well as in large cities. 2d. The ability and foresight of our designers in providing electrical household articles that give complete satisfaction to the artistic eye and the practical touch of the modern housewife who is quick to discriminate in the selection of what is most useful in the home at the most reasonable price. The superiority of material, design, method of manufacture and our liberal treatment of our many sales agents."

Continuing its pertinent record, the letter gives the following data: "We have just made arrangements to treble the size of our factory, which makes our third addition in factory construction in four years, as we started with only one hundred and fifty square feet of space, a master idea and a large supply of hope. Our machinery construction department, in which huge hoists are made, shows the same healthy growth, and within the present year twelve thousand dollars' worth of machinery has been turned out for one concern alone. Our automobile accessory department has developed to a point where we have had to refuse orders on account of lack of productive space."

The business of D. C. Hughes & Company was incorporated under this title in the year 1913 and the charter granted by the state of Illinois gave designation of the capital stock as five thousand dollars. David C. Hughes was elected president of the company; Ray Caspers, the treasurer; and H. W. Wessling the secretary. The diminutive factory was established in a building at 443 Des Plaines street, and here, on a modest scale, was initiated the manufacturing of electric-lighting units and the "Geno-Lite" motorcycle lights. In September of the same year Mr. Hughes purchased the interests of his associates, borrowed twenty-five hundred dollars and installed in the garage at the rear of his residence, 1774 Leland avenue, his little factory equipment. Here he employed four assistants and began the manufacturing of the first of the now celebrated and popular "Elektro" household devices, soon thereafter placing the first "Elektro" electric toasters on the market. In May, 1914, Mr. Hughes removed his factory equipment to a one-story building at 4642-44 Ravenswood avenue, this modest brick structure giving a floor space of somewhat more than two thousand square feet. Under better productive conditions here devised the line of electrical household appliances manufactured was augmented, and the following years gave a continuous and substantial expansion of the business. In May, 1915, Mr. Hughes added a second story to his factory building, and the summer of 1917 the factory found its corps of employes to be nearly fifty. In August, 1917, the company let the contracts for the erection of a two-story building addition to the manufacturing plant, and this modern industrial structure supplies nearly seven thousand square feet of floor space, the new building, admirably equipped,

having been placed in commission in 1917, and the corps of operatives employed having been increased to one hundred.

The company maintains branches in New York city, Cleveland, Detroit and Minneapolis, and also a well appointed salesroom in the "Loop" in central business district of Chicago. The products of the Hughes factory were handled almost exclusively through large and representative distributors who sold to the jobbing trade until it became evident to Mr. Hughes that the business could be more consistently exploited through the forming of a strong independent sales force, this policy having been adopted in May, 1917.

DAVID C. HUGHES

David C. Hughes, founder and executive head of the representative industrial enterprise, was born at Bangor, Wales, on the 29th of June, 1880, a son of Hugh W. Hughes, who came to America and established the family home in Chicago in 1890. David C. Hughes thus gained the major part of his youthful education in the public schools of Chicago, and his ambition and self-reliance were exemplified in his broadening his training by attending night schools and by taking a course in a correspondence school. As a lad of fifteen years he found employment in connection with the operation of a drill press at the extensive factory of the Western Electric Company, and from this time on he was employed in several different well known manufacturing concerns, filling responsible positions, until he purchased a small brass foundry on Clinton street, and after operating the same eighteen months he sold the business. Later he established the Ravenswood Brass Foundry, but he discontinued the same at the end of a year and purchased an interest in the Rex Tool Company. Eighteen months thereafter he sold this interest and accepted the position of superintendent of the Rogers Addresso Company, in which connection he had charge of the work of three hundred operatives. Here Mr. Hughes invented eighty-four different devices upon which the company obtained patents, and this alliance continued until he initiated his independent industrial enterprise. He has pressed steadily forward and his achievement attests the sterling characteristics of the man.

AUTO SPEED RECORDER COMPANY

In connection with the marvelous development of the automobile industry there has incidentally been afforded opportunity for the upbuilding also of a widely diversified series of subsidiary or supplemental industries, and an important enterprise that may be listed in this latter category is that controlled by the Auto-Speed Recorder Company, inventors and manufacturers of the remarkably efficient ASR speed recorder, which is to be unequivocally designated as the best device of the kind placed on the market. The thoroughly modern factory of this company is situated at the corner of Nelson street and North Ashland avenue, and the business had its inception in January, 1912, when the

Jeske brothers, Clarence P. and Charles A., initiated their careful study and experimentation in the perfecting of a high-grade automobile speed recorder, patents on the device having been granted to them in November, 1915, and other patents being now pending on improvements since made. In October, 1916, active manufacturing operations were instituted in the present plant, and within the first year one thousand of the speed recorders were manufactured and sold. Intrinsic merit so marked the invention that popular appreciation was assured from the time of the introduction of the valuable device, and the trade of the concern continues to show a constantly increasing trend. The company is incorporated with a capital stock of twenty-five thousand dollars and the personnel of its official corps is as here noted: Salvatore Santino, president; Seymour H. Dickinson, vice-president; Charles A. Jeske, treasurer; and Wentworth Yunker, secretary. The mechanical equipment and general facilities of the manufacturing plant of the company are of the most approved modern type and here employment is given to an excellent staff of expert machinists and precision mechanics.

While it is not within the assigned province of this publication to attempt detailed description of the products of any concern represented in its pages, there can be no measure of inconsistency in making, with minor elimination and paraphrase, certain quotations from a brochure issued by the Auto-Speed Recorder Company: "The ASR Speed Recorder is the product of genius. It is based on the unvarying laws of nature; therefore it is as true as nature itself. It is the natural result of scientific experience and mechanical exactness; it embodies all the dependability of service and durability of construction that is expected and demanded by, and due to, every motor-car owner in the use of accessories of this kind. The ASR Speed Recorder is an instrument perfected for permanently and accurately recording, and in a most distinct and positive way, the smallest fraction of a distance traveled, and at the rate of speed at which the vehicle moved while covering the distance. The keyless, numberless lock which is a part of the ASR Speed Recorder has a range of combinations so wide and so varied as to baffle the most expert; yet so simple that even a child can open it if he possesses the secret combination numbers. With this lock there is no fumbling or searching for a key, no key to lose, and no possibility of the lock ever getting out of order. By this locking system ignition can be completely cut off and your engine rendered absolutely useless. This theft-proof feature will relieve your mind of any anxiety concerning the safety of your car, because it is locked just as securely as are the massive doors of the modern bank vault, and no man can open it except the one knowing the correct combination. This lock is absolutely screw-driver-proof and unpickable, and offers the simplest, safest, cheapest, most economical and convenient form of protection of cars against burglars, 'borrowers' or 'joy-riders.' No other speed-recording device now on the market can show such a clean, clear record for absolute accuracy. It is truly an instrument that can not lie."

In a succinct survey of the reasons why a car should be equipped with this splendid accessory the same publication offers the following statements: "The ASR Speed Recorder is as important to your car as your car is important to you. It takes the place of all present-style speed meters. It is easily and quickly installed on any make of motor car, without the use of special devices. Its accuracy is unquestioned; its value is undoubted. No other device for the same purpose

can show the exact speed per hour, number of miles traveled, duration of speed, stops, etc., with such unvarying accuracy as is obtained with this instrument. It eliminates worry, as it makes your car absolutely theft-proof. It reduces motor-car insurance rates. It tells you whether your car has been 'borrowed' at night or day, and if so, when, how and to what extent. It makes 'Joy-riding' impossible. It saves you from petty persecution by overzealous officials. It helps make your car the economical car it should be, as it indirectly saves wear and tear on tires, motor, etc. It protects you against unfair damage suits. It adds to the appearance and attractiveness of your motor car."

From another paragraph are taken the following statements: "The ASR Speed Recorder eventually will be recognized as a standard part of the equipment of every motor truck or fleet of motor trucks, because it gives a complete and detailed record of each trip, the various speeds, stops, duration of any certain speed, and the daily and weekly mileage of each individual motor truck, as well as the total mileage up to five thousand miles. It also puts an effective check on loitering and killing time."

SALVATORE SANTINO

Salvatore Santino, president of the Auto-Speed Recorder Company, was born in the fair old city of Palermo, Italy, on the 24th of August, 1878, a son of Thomas Santino. In his native city he acquired his preliminary education, which was supplemented by his attending the public schools of New York city, where his parents established their home in 1888, when he was a lad of ten years. Eventually he completed a thorough technical course in electrical engineering and within the period of his residence in Chicago he has been employed in turn by the Crane Company, the Automatic Telephone Company, the American Steel & Wire Company, the Automatic Telephone Company, and the Victor-Loew Engine Company. In 1915 he became actively associated as a stockholder in the Auto-Speed Recorder Company, and he is president of this progressive industrial corporation. Mr. Santino is an expert designer in mechanical lines and utilizes his technical ability in active supervision of certain departments of the well ordered factory of the company of which he is the executive head. He is a member of several professional organizations and is affiliated with the Loyal Order of Moose.

CLARENCE P. JESKE

Clarence P. Jeske, inventor of the ASR automobile speed recorder, was born in Chicago, on the 26th of August, 1889, a son of Herman R. Jeske, a prosperous manufacturer of paper boxes. Mr. Jeske profited fully by the advantages afforded in the public schools and as a youth he was for a time engaged in work at the trade of sign-painting. He then entered a machine shop and through his broad and varied experience in the years that followed he became an expert machinist. Finally he established an automobile repair shop, and after successfully

conducting the same for three years he sold the business, in order that he might devote his time and attention to the experimental and development work that culminated in his invention of the remarkably efficient motor-car recorder now manufactured by the Auto-Speed Recorder Company. Later he perfected also the theft-proof-lock-devices which is an important feature of the recorder. He is a member of the Chicago Motor Club and is one of the progressive business men of his native city. Mr. Jeske married Miss Mabel Anderson and they reside at 2423 Irving Park boulevard.

CHARLES A. JESKE

Charles A. Jeske, treasurer of the Auto-Speed Recorder Company, was born in Chicago, December 15, 1892, and has gained secure status as one of the representative business men of the younger generation in his native city. After completing the curriculum of the public schools he served a thorough apprenticeship in a printing establishment, and in 1914 he established an independent commercial job-printing business. In 1916 he sold his plant and business to become associated with his brother in the development of the speed recorder now manufactured by the company of which he is treasurer. His religious faith is that of the Catholic church and he is an active member of the Western Catholic Union.

CHICAGO MINIATURE LAMP WORKS

The prosperous industrial enterprise conducted by this corporation is based upon the unique and valuable inventions made by Adolph W. Gast, who is secretary and general manager of the company. The well equipped factory now turns out a varied and specially attractive line of electric lamps and miniature letters that are electrically illuminated from within and that are extensively used for advertising purposes. The scope of the business has been expanded to include also the manufacturing of scientific X-ray tubes and other scientific glass apparatus. The enterprise, under the effective direction of Mr. Gast, has attained to broad proportions and the products of the concern are sold in all parts of the United States, besides which a substantial export trade has been developed.

In 1909, under the laws of Illinois, the Chicago Miniature Lamp Works was incorporated with a capital stock of two thousand dollars and with the following named officers: Frank W. Jansen, president and treasurer; Adolph W. Gast, vice-president and general manager; and George G. Davis, secretary. The new corporation instituted operations on a modest scale, and the first factory was established in small quarters at 2110 South Halsted street. The original province of the business was in the manufacturing and sale of miniature electric lamps which represented an improved design invented by Mr. Gast. The little factory had less than one thousand square feet of floor space and the working force consisted of Mr. Gast and four employes, the secretary of the company having been an expert artisan in this line of productive enterprise. The sales of the company for the first year aggregated about eight thousand dollars. In 1910 Mr. Gast invented

and perfected a miniature electric letter device for advertising purposes, and the new and attractive novelty met with most favorable reception, its attractiveness and practical value being readily appreciated. The manufacturing of these electric letters was added to the functions of the company, and from a small inception the business in this department grew to large volume. From the original location the factory was removed to more eligible quarters, at 15 North Jefferson street, where requisition was made for seventy-five hundred square feet of floor space. The miniature electric letters proved a wonderful success when introduced in a local way, and the remarkable advertising novelty soon attracted the attention of the Federal Sign System, with the eventual result that this corporation purchased Frank W. Jansen's interest in Chicago Miniature Lamp Works, Mr. Jansen thus retiring from the presidency of the company. At this time a reorganization of the business was effected and the capital stock was increased to twenty-five thousand dollars. The factory was removed to its present location, at 640 West Lake street, where nine thousand square feet of floor space accommodate the various departments of manufacture and where an average of one hundred men is employed. The concern now figures as an important subsidiary of the Federal Sign System, which is one of the most extensive concerns of the kind in the United States. In 1915 the capital stock of the Chicago Miniature Lamp Works was increased to one hundred and fifty thousand dollars and the enterprise is now conducted on an extensive scale, with products sold in all parts of the United States and with a substantial export trade, Mr. Gast having protected his admirable inventions by foreign as well as domestic patents. The company has gained trade from England and France, as well as the Canadian provinces, and prior to the inception of the great European war arrangements had been made to extend the trade of the concern into Germany. In the manufacturing of high-grade glass apparatus and accessories for scientific purposes, including the production of the best modern type of X-ray tubes, the company has gained high reputation and is one of the foremnst exponents of this line of production in Chicago. Adolph W. Gast has had the entire supervision of the practical details of the business since the retirement of the first president, Frank W. Jansen, and he is now serving not only as general manager but also as secretary of the company, James S. MacPherson being president and treasurer and William K. Otis the vice-president. Mr. Gast has invented a remarkable electric letter box, and this valuable invention is to be placed on the market in the near future. Under his vigorous and effective management the business of the company has been developed to the point where it represents one of the flourishing industrial enterprises of Chicago. The electric signs manufactured are handled through the medium of the Federal Sign System, a corporation that figures as general sales agents for the products of the Chicago Miniature Lamp Company.

Adolph W. Gast, founder, secretary and general manager of the Chicago Miniature Lamp Works was born in Chicago on the 25th of February, 1879. He is a son of Edward and Minnie (Rietz) Gast, who still maintain their residence in Chicago. The preliminary education of Adolph W. Gast was obtained in the public schools of Chicago and before he had celebrated his fifteenth birthday anniversary he had found employment and become one of the world's productive workers. His application did not curb his ambition for broader education, and while employed he availed himself of the privileges of evening schools. The

first position taken by Mr. Gast was in the automatic screw-machine department of the large Chicago plant of the Western Electric Company, and in the initial stages of his application he received the significant salary of three and one-half dollars weekly. With receptive mind, natural mechanical inclination and unbounded ambition, Mr. Gast worked his way upward and spared no pains in adding to his technical knowledge of applied electricity. After a period of six years of effective service in the screw-machine department, Mr. Gast was recommended for transfer to the telephone switchboard and lamp department of the Western Electric Company, and as an expert workman and capable executive he continued his activities in this department for a period of eleven years, during the last five of which he held the position of foreman. It was while thus engaged that Mr. Gast initiated the study and experimentation that finally resulted in his inventing the miniature electric signs that have now gained extensive sale and that have established his reputation as an expert in the devising and manufacturing of electric lamps. In 1909 Frank W. Jansen offered to Mr. Gast an interest in an electrical manufacturing business which he was preparing to amplify if proper technical co-operation could be obtained. Mr. Gast considered favorably the overtures thus made and after a day of deliberation he decided to resign his position in the employ of the Western Electric Company, with which his alliance had continued seventeen years, and to enter into partnership with Mr. Jansen as a collaborator in the developing of the business of the Chicago Miniature Lamp Works.

Mr. Gast is affiliated with the Masonic fraternity, holds membership in the Chicago Athletic Association, and he finds his principal recreation in out-door sports and through his devotion to music, his musical talents having brought to him no minor recognition.

On the 28th of June, 1905, was solemnized the marriage of Mr. Gast to Miss Alice Liljenstrom, of Chicago, and they have two children,—Joan, born June 29, 1908, and Virginia, born December 6, 1910.

THE KINNEY-ROME COMPANY

This substantial corporation, the headquarters of which are at 3601-31 South Racine avenue, represents the consolidation of the business of the Kinney-Rodier Company and the Central Bedding Company, and its organization was effected in November, 1910, when it was duly incorporated under the laws of Illinois and with a capital stock of one hundred and fifty-five thousand dollars. The officers of the company are as here noted: Frank W. Kinney, president; A. F. Carpenter, treasurer; and M. T. Kinney, secretary.

The Kinney-Rome Company is engaged in the manufacturing of bed-springs of special and improved design and also in the manufacturing of metal beds, employment being given to a force of about three hundred persons in connection with the manufacturing and administrative departments of the business. The products of the concern find large demand throughout the western states and the enterprise has so expanded in scope and importance that it now constitutes a valuable addition to the manufacturing and commercial industries of the western

metropolis. Within the past six years the volume of the business has increased fourfold, and the company's special products are the Kinney Guaranteed Bed Springs and the Rome Beds. The building occupied is a four-story structure and affords an aggregate floor space of about one hundred and fifty thousand square feet.

SANFORD MANUFACTURING COMPANY

The year 1866 marks the date of the incorporation of the Sanford Manufacturing Co. in Illinois, which for some years before that time had been inaugurated and conducted at Worcester, Mass., by William H. Sanford, its founder. The Sanford Manufacturing Co. has therefore been a Chicago institution for fifty-two years, and now occupies an extensive factory at the corner of Peoria and West Congress streets, where also its main office is situated. It is the largest and most complete exclusive ink factory in the world, and its proprietors are the pioneers and originators of almost every idea and device that has been a benefit to this particular line.

More fully described the products of this factory embrace a complete line of Inks, Writing Fluids, Colored Inks, Indelible Inks, Library Paste, Mucilage, etc., put up in every convenient form and quantity for use by consumers. It is difficult for the average consumer of ink to realize that it is frequently required by large schools and mercantile establishments *in kegs*, but the enterprise of this company has provided for its supply in the quantities implied by the use of such large containers.

The construction of the immense plant of the Sanford Manufacturing Co. was found necessary to meet the constantly increasing demand for its products. The building itself is of pressed brick concrete interior of the most substantial character, six stories in height, fronting 122 feet on Peoria street, and 118 feet on West Congress street. It was built in 1901. The building is provided with all the facilities for the manufacture and shipment of the extensive variety of goods included in the line of the company's specialties. Its employees find here every convenience for carrying on the necessary processes involved in the preparation for shipment and sale of its products, which are to be found in all parts of the world.

WILLIAM HENRY REDINGTON

When a man has established a residence in Chicago at as remote a period in the past as the year 1866, and has continuously maintained it to this time, he may safely be classed as an old resident, even though his domicile may, for a large part of the intervening time, be in one of the city's suburbs. There must indeed be quite a considerable number of citizens who have lived here a half century or more, but remembering that the city had then attained to but one-twelfth of its present size in point of population, we must suppose that the number of such persons is comparatively few, for later comers and those who have been born since that time make up by far the greater number.

The year 1866 marks a time in the history of Chicago of expanding trade and manufactures in every line of commerce and industry. It was the year following the close of the Civil War, a time when there was a heavy discount on the national currency the result of the financial strain which the government had endured during the previous years of war, a time of ten per cent money rates, and a time of extensive city improvements on a large scale; and also, as we look back upon it, a period when the course of events was steadily moving towards the greatest fire disaster of all time, the fateful year of 1871.

It was in this year of 1866 that the subject of this sketch came to Chicago henceforth to make this city the scene of his future business activities and to become identified with its affairs. The house in whose service he engaged was the Sanford Manufacturing Co., and entering as a junior employee in 1868 he has remained constantly in one capacity and another, until today he is the president and guiding spirit of this representative concern, the leading company of its kind in the west.

Mr. Redington is the "Dean of the Ink industry," a branch of business that he has built up and which owes to him its acknowledged position in its special line of manufacture. When as a mere lad he entered the employ of the company, of which he is now the head, he could scarcely have foreseen the career upon the threshold of which he then stood, but his natural gifts and steady resolution, his faithfulness to his ideals and his stability of character, have won for him and his associates a measure of success little dreamed of in the beginning.

The birthplace of William Henry Redington was at Fredonia, Chautauqua County, New York, and its date was June 6, 1851. He obtained his education at the common schools in that town. On October 19, 1875, he was married to Frances A. Lull, of Chicago. One daughter, Ruth (Mrs. H. T. Griswold), is now living in Evanston. Mr. Redington has himself been a resident of Evanston for many years, he is a member of the Chicago Association of Commerce; president of the L. H. Thomas Co.; life member of the Chicago Art Institute; member of the Chicago Historical Society; the Union League Club, of Chicago; the Chicago Athletic Club; the Glen View Golf Club; and the Westmoreland Country Club. His residence is at 1232 Ridge avenue, Evanston.

THE MYALL-WALLACE COMPANY

Among the multifarious enterprises that go to make up the complex texture of the great industrial and commercial fabric of the western metropolis that conducted by the company above named is distinctively unique, even as it is one of important order. The company has its establishment at 17 East Austin avenue and its function is in the scientific heat-treatment of steel. The founder of the business was Percival J. Myall, who has been president of the company from the time of its incorporation, on the 1st of May, 1912. This is the pioneer concern in Chicago to introduce its special and scientific process of hardening steel, and though it is to be considered as a young, even though pioneer, corporation in its line of enterprise its business has been developed to substantial proportions and its process has been of great influence in the furtherance of the auto-

A. W. RAYMOND

P. J. MYALL

mobile industry. By this scientific heat-treatment of steel the best possible results are obtained in the treatment of the material utilized in the axels and transmission gearing of automobiles of all types. The wearing capacity of these important automobile parts is greatly increased by the treatment, crystalization of the metal is practically eliminated and sudden collapse in the vital parts of the machine is obviated. As the initiators of a new process the company met with its quota of obstacles and skepticism in the introduction of its system of hardening steel, but results have shown the effectiveness of the process, doubt has been removed from the minds of automobile manufacturers and others demanding steel of the maximum strength and vitality, and the business of the company is now on a most substantial basis. After two years of measureable difficulty in exploiting the new process, William Wallace, who was Mr. Myall's original associate in the enterprise, became discouraged with the prospect and sold his interest in the business to Albert W. Raymond, the original corporate title being retained, however. Operations were instituted in a modest way, at the present location, and at the start Mr. Myall, with two assistants, gave active and arduous service at the furnaces, unwavering in his confidence that the enterprise would ultimately become successful, and sparing himself neither mental or physical labor to further the desired ends. Since the first year the business has increased consecutively in scope and importance and at the present time, in 1917, fifteen expert steel workers are employed to meet the demands of the trade. Since the 1st of January, 1915, the plant has been in active operation twenty-four hours a day, and the business has increased three-fold. It is the intention of the company to obtain within the near future new and larger quarters, in order that the capacity of the plant may be doubled.

PERCIVAL J. MYALL

The president of the Myall-Wallace Company was born at Lowestoft, a seaport town in Suffolk, England, and the date of his nativity was June 17, 1879. He is a son of the late Charles Myall who came with his family to America and who settled at Oak Park, a suburb of Chicago, in 1884. He engaged in mercantile pursuits in Chicago and continued his activities along this line until his death.

Percival J. Myall was afforded the advantages of the public schools of Chicago and also those of the Lewis Institute, one of the city's admirable schools for the technical and manual training of young men. His first business position was in the steel mills about Chicago, where he rose through his own ability and efforts to the post of chief chemist and experimental man. For eleven years he was in the employ of the Simonds Manufacturing Company, of Chicago, this being one of the largest concerns in the Union engaged in the manufacturing of saws, and it was through these fortifying associations that Mr. Myall acquired thorough and accurate knowledge of steel tempering by the heat process. He has taken deep interest in the steel industry and has studied processes involved in all phases from the handling of the raw material to the production of the finest tempered products. Thus he had "a reason for the faith that was in him" when

he determined to start the independent enterprise that has been developed under his able direction to the substantial business now controlled by the company of which he is the executive head. He and his valued coadjutor, Mr. Raymond, who is vice president and treasurer of the company, are young men of energy and progressiveness and have gained secure vantage-place in the vigorous industrial and commercial life of Chicago. He was one of the active members in organizing the Chicago branch of the Steel Heating Research Club. The company is represented in membership in the Illinois Manufacturers' Association.

ALBERT W. RAYMOND

In a preceding paragraph has been made definite mention of Mr. Raymond's association with the Myall-Wallace Company, and it may further be stated that he is a native son of Chicago, where he was born on October 6th, 1888. He is a son of Albert Raymond, who was the founder and president of the Raymond Brothers Pulverizing Company, a prosperous industrial concern of Chicago. Mr. Raymond gained his early education in Chicago and supplemented this by a course in metallurgy at the historic old Columbia University, under the personal direction of Prof. Howe in New York city. He has been resourceful and vital in the upbuilding of the business of the Myall-Wallace Company and is one of the vigorous and popular business men of the younger generation in his native city and holds membership in the new Evanston Golf Club.

THE KROPP FORGE COMPANY

In the manufacturing of high-grade iron and steel forgings this company maintains its modern and finely equipped industrial plant at 2500-2526 West Twenty-first street. The business was founded February 1st, 1902, under the firm name of Sundberg, Kropp & Company, and the original forge was located at 24 South Jefferson street. The functions of the new firm were the production of forgings for the trade, and in the forge, which utilized 3,450 square feet of floor space, employment was given to five persons, virtually the entire mechanical equipment of the little plant having consisted of one steam hammer. Superiority of products and efficiency of service entailed a substantial growth of the business in the passing years, and by 1907 the accommodations of the original plant proved inadequate,—additional machinery and appliances having been installed and the force of operatives increased. At this juncture the business was removed to more eligible quarters, at 2500-2526 West Twenty-first street. In 1912, to provide for the constantly expanding business, property to the east of the original plant was added, and in 1916 the company took control of its present extensive site, which includes that formerly held and extends from 2500 to 2526 West Twenty-first street, the entire ground space aggregating 40,625 square feet and three fourths of the same being covered with buildings utilized by the company. The equipment of the now large and well ordered plant has been increased by the

adding of three modern steam hammers, making a total of seven, and by the installing of additional lathes, drills and other appliances, the company now having hammers that will handle forgings up to those of sixteen-inch billet. The concern now has in operation seven steam hammers; a battery of five boilers; six furnaces, equipped with the Jones underfeed stokers and motor-driven fans; twenty electric motors; ten lathes; five drill presses; one boring mill and one planer, the entire machine shop being run by electric power and the output being a general line of steam-hammer forgings.

On the 1st of March, 1912, as a matter of industrial expediency incidental to the growth of the business, a reorganization was effected under the present title of the Kropp Forge Company, and under the corporate charter the company based its operations on a capital stock of forty thousand dollars, which in December, 1917 was increased to five hundred thousand to take care of increasing business. The officers of the company have been from the beginning as here noted: Charles A. Kropp, president and treasurer, and Otto C. Niss, secretary, both having secure standing in connection with industrial and civic activities in Chicago. The company has membership representation in the National Metal Trades Association and in its employ are now retained ninety men, the majority of whom are skilled in the various departments of forge work.

At the time of going to press, the Kropp Forge Company has purchased eight and one-half acres at the South East corner of West Twelfth street and Fifty-fourth avenue, where is being built a modern factory building 150 by 360 feet and a two story office. This will give them more than double the capacity and a switch track on the B. and O. Chicago Terminal.

CHARLES A. KROPP

Charles A. Kropp, president and treasurer of the Kropp Forge Company, was born at Annefors, Sweden, where he acquired his early education and also served a thorough apprenticeship in the manufacture of forgings. In 1888 he came to America and established his residence in Chicago, where he continued in the employ of A. J. O'Leary & Son, until 1902, when he became one of the founders of the substantial industrial enterprise of which he is now the executive head. He is a loyal and progressive citizen and has achieved worthy success as a vigorous exponent of industrial activity in the western metropolis. His fealty to and appreciation of his native land is shown in his membership in the Swedish Club, but he takes pride in proclaiming himself a thorough American.

OTTO C. NISS

Otto C. Niss, secretary of the Kropp Forge Company, was born in Neuen Dorf Heide, Germany, in 1887, and two years later his parents immigrated to the United States and settled in Wisconsin. Mr. Niss profited fully by the advantages of the public schools of Appleton, that state, and later took an effective

course in a local business college. In 1905 he came to Chicago, where he continued in the employ of a leading mail-order concern until 1910, when he became identified with the business now conducted by the Kropp Forge Company, of which he has been secretary from the time of its incorporation, in 1912, and to the success of which he has contributed materially through his effective executive service and policies.

APEX APPLIANCE COMPANY

An industrial enterprise of appreciable magnitude and of major importance as touch the practical service given, is that controlled by the well organized and well ordered corporation whose title initiates this paragraph.

The Apex Appliance Company was organized and incorporated in the year 1910, for the purpose of manufacturing and marketing the appliances invented and patented by Carl W. Swanson. The original factory was established at the corner of Sixty-third and Wallace streets, and that operations were instituted on a modest scale need no further voucher than the statement that this factory utilized only six hundred and forty square feet of floor space. The intrinsic vale and superiority of the products manufactured brought substantial and consecutive expansion to the business and finally it became imperative to secure more ample factory quarters, with increased productive facilities. Under these conditions, in 1912, the company purchased a tract of ground at the corner of Thirtieth street and Kedzie avenue, the site of the present large and modern plant. On this site was originally erected by the company a one-story factory building of brick construction and the same gave an aggregate of two thousand square feet of floor space. This sufficed for the carrying forward of operations until 1914, when it was found expedient to augment facilities by the erection of an adjunct factory building, the completion of which increased the floor area of the plant by twelve thousand square feet. The strong and vital growth of the industry soon made a demand for still further factory accommodation, and in 1917 the company purchased forty-one thousand square feet of additional ground space, and on this was erected an annex building that affords twenty-four thousand square feet of floor space. These statements in themselves afford incontrovertible evidence of the high popular estimate placed upon the washing and ironing machines manufactured and introduced by this progressive corporation, and the large and finely equipped plant is operated to full capacity in meeting the demands for the products here issued.

The Apex Appliance Company placed its original capital stock at twenty-five thousand dollars, and with the great expansion of the business commercial expediency has caused the increase of the capital to one hundred thousand dollars. The personnel of the official corps of the company is as here noted: Carl W. Swanson, president; A. F. Anderson, vice-president; and O. H. Ehrhardt, secretary and treasurer. In addition to these executives the board of directors of the company includes also Arthur Gross, A. Luckenbach, A. F. Anderson, Edwin C. Golbeck, and Alfred Anderson. The company owns two basic patents assigned to it by its president, whose inventions, as before intimated, formed the nucleus around which has been evolved the large and important industry, and in addition

to these basic patents the corporation has a large number of patents granted on improvements, all of these patents being registered in foreign countries as well as in the United States patent office. In the factory employment is given to an average force of 100 skilled mechanics, and the value of the annual output is in excess of five hundred thousand dollars.

In a succinct way it may be stated that the Apex Appliance Company figures as the manufacturer of the Apex electric washing machines, Apex gasoline-drive washing machines, hand-operated washing machines, nursery washing machines, the Apex ironing machine, or domestic mangle, and various incidental electrical and mechanical appliances. The trade of the concern has been extended into all parts of the United States and also into foreign countries as the Apex machines represent the ultimate of efficiency in their important field of service. This progressive Chicago corporation stands as one of the most important in its special field of production to be found in the entire world.

The specially attractive advertising and descriptive catalogues and bulletins issued by the company give full details concerning the various products manufactured, but it is well within the province of this article to offer by quotations from various sources certain pertinent data that consistently merit such reproduction.

The president of the Apex Appliance Company is a man of not only marked inventive talent but also of far vision and distinct initiative. Of his special service in the development of the Apex washing machines the following record has been given: "Mr. Swanson became convinced that the electric washing machine was destined to come into general use in the home, along with other electrical appliances, and of his attitude in this respect he has said: 'I realize there was a new era coming. The home had been neglected, where the shop and office had adopted new and labor-saving devices, and I believed the day was at hand when electric appliances, such as vacuum cleaners, washing machines and ironing machines, would go far to eliminate the drudgery of the home. I was particularly interested in the washing machine, because washing by hand is the hardest work in the home, and I felt that a machine that would do away with this cumbersome labor would win. I became interested in the oscillatory type of machines, as I believed this to be the most effective principle I had found. I spent several years experimenting on various means of using this principle before adopting the same and starting to utilize it in a practical manufacturing way. It has proved out in every sense. After we had succeeded in perfecting the Apex, the next problem was to find the best method of merchandising the product. After a careful study of the field as a whole, we decided to work with the man who was specializing on washing machines and housewares. The plan has not changed in principle. This plan consists of selling the dealer first, to prove to him personally that the claims which were made for the machine were true,—that the machine would do work quicker and better than it could be done in any other way. After the dealer was thoroughly satisfied in his own mind that the machine was all we represented it to be, the plan was presented to him for selling to the consumer, and with this co-operation between the dealer and ourselves it was not long before a substantial business was built up by the individual dealer. The result of this plan can best be shown by the present business of our company. Our first idea, conceived years ago, that a big demand would come

for everything in the line of electric housewares for the home has proved correct, and especially as pertaining to washing machines and ironing machines. Looking further into the future, there is no doubt in our mind, in fact it is a certainty, that a large majority of the houses of the country will be equipped eventually with electrical appliances of all kind for the handling of work so long done by hand.' ''

The article from which the foregoing extracts have been made with but slight paraphrase, continues as follows: ''An article to be successfully sold by a dealer must have the right organization back of it. The Apex Appliance Company has taken this fact into consideration from the beginning and has gathered together a complete organization for turning out each and every part which is put into its machines. From raw material up through the various processes every part is tested before it enters the machine, and then the machine as a whole must come up to the high standard set. In the large plant which is used only for the manufacturing of washing and ironing machines, a modern and up-to-date system has been evolved,—one which results in high efficiency and in a low cost of production. This has enabled the company to put on the market a complete line of machines of the highest type of efficiency, and that at a price at which they can be sold in the great majority of homes.''

The Apex Appliance Company was a pioneer in the manufacturing of electrical washing machines and has continued as a leader in the steady march of progress that has marked this important industry, which should properly touch every home in the land. The company's descriptive liaterature gives all necessary information concerning the various types of its products, and no machines of the kind on the market can excell the Apex in practical efficiency and economy of operation. Dealers or individual persons may gain this information by making direct application by correspondence addressed to the company's offices,—3223-31 West Thirtieth street, Chicago.

CARL W. SWANSON

As consistently supplemental to the foregoing article concerning the company of which he is president and of which he was the founder, may be given a brief review of the career of Mr. Swanson, an inventor who has given to the world mechanisms of great and enduring value. Mr. Swanson was born in the singularly picturesque maritime city of Frederickshald, Norway, on the 24th of September, 1877, and his achievement in the industrial and commercial world would be most creditable to a man many years his senior. After having profited by the advantages of the schools of his historic native city he there learned the trade of stationary engineer. At the age of twenty-two years he came to the United States and established his home in Chicago. Here he worked at his trade for the ensuing seven years, and he then gave his attention to the perfecting of his invention, as represented in the now celebrated and widely used Apex washing machines. He has since taken out a series of patents of supplemental order,—on washing machines, ironing machines, wringers, etc., as duly intimated in the context of the preceding article, and at the time of this writing he is preparing

to manufacture the Apex dish-washing machines, representing another remarkably valuable invention on his part. In his initial business experience in Chicago Mr. Swanson was associated with the Prince Manufacturing Company, of Chicago Ridge, and when this concern effected consolidation with the Keller Manufacturing Company he resigned his position and effected the organization of the Apex Appliance Company, of which he has since continued the executive head and which he has made one of the substantial and important industrial corporations lending to the commercial precedence of the western metropolis.

AETNA CABINET & FIXTURE CO.

The modern manufacturing plant of this corporation is situated at 2512-20 South Robey street, Chicago, and its admirable mechanical equipment has been specially installed for the production of the highest type of work in a varied line of bank, store and office fixtures and furniture. The output is largely of special design and includes fixtures of metal, wood, marble, etc., while the concern has gained the reputation of turning out the highest grade of cabinet work. The company has an "up-to-the-minute" designing department that prepares complete plans and specifications for their clients, while in many other instances the equipment is manufactured in accordance with individual specifications and demands. This well ordered manufacturing enterprise was founded in 1911, when the Aetna Cabinet & Fixture Company was incorporated under the provisions of the laws of Illinois with a capital stock of $5,000.00 which was later increased to $25,000.00 paid in full. The personnel of the company is as here noted: A. J. Carstens, president, Chas. Lange, vice-president and treasurer, and D. L. Larkin, secretary.

The company established its factory at the present eligible location and the enterprise has had a substantial and normal expansion in the intervening years, with the result that the original quarters, about twenty thousand square feet of floor space, proved inadequate, with the result that the factory as now constituted utilizes eighty thousand square feet of floor space, while the original force of twenty-five employees has been increased to an average of one hundred and twenty-five. The most careful executive policies have been brought to bear in the conducting of the business and good economic judgment has been shown in the reducing of overhead expenses by the adoption of special machinery that makes possible the reduction of the corps of operatives in the factory. From Chicago itself the company receives a large volume of supporting patronage, but the superiority of product and the efficiency of service caused the business to transcend local limitations and to extend itself into the various states of the middle west and even those of the Pacific coast. The mechanical equipment of the factory is of the best modern order and includes the largest veneer press to be found in the city of Chicago. Office desks and other office furniture of the best modern design and workmanship constitute a large part of the output of this industrial plant and special fixtures and furniture for offices, stores, etc., are made to order by the company. The concern keeps in close touch with its trade through the western and central states by retaining in its employ a corps of

efficient traveling representatives. The company has membership in the Manufacturers & Dealers Association.

A. J. CARSTENS

A. J. Carstens, the president of the Aetna Cabinet & Fixture Company, was born in Sweden on the 28th day of August, 1858, and there he received his early educational discipline. He was a lad of about twelve years when, in 1870, he came with his parents to America, and the family home was established in Chicago, where he was reared to maturity and effectively supplemented his prior education by attending the public schools. Through thorough apprenticeship in his youth and later practical experience of a broad and varied order Mr. Carstens has become authority in the field of manufacturing in which he now directs his energies, and he finally became vice-president and general manager of the Merley & Heaney Manufacturing Company, which dual office he continued to hold for twelve years. He then resigned his position and severed his association with the company, in order to take charge of the Aetna Cabinet & Fixture Company. Mr. Carstens has shown a lively and helpful interest in civic affairs and has been influential in connection with municipal government and public matters of other kinds in the city that has been his home since his boyhood days and to which he pays the loyalty of a native son. He holds membership in the Illinois Athletic Association and in the Masonic Fraternity he has received the Thirty-Second degree of the Ancient Accepted Scottish Rite, besides being affiliated with the adjunct organization, the Ancient Arabic Order of the Nobles of the Mystic Shrine.

Chas. Lang, vice-president and treasurer, is not active in the management of the affairs of the Company, but devotes his time to handling his personal business.

ADAMS & ELTING COMPANY

Under the trademark name of Ad-El-Ite, representing the combination of the first syllables of the two surnames that go to make up the title of the corporation, this company has developed a large and prosperous industrial enterprise in the manufacturing of paints, varnishes, enamels, strains, auto specialties and similar products, all of which have gained reputation for maximum excellence. In January, 1890, William Porter Adams, president of the present corporation, effected the organization of the Adams Paint & Oil Company, but in the following March a reorganization was brought about and the present title of Adams & Elting Company was adopted, the interested principals being William Porter Adams, Philip L. F. Elting and Joseph C. Gale. The new concern initiated operations in 1890 with a force of only three persons, to whom was assigned the work of grinding and mixing paints, varnishes, etc., and making the finished products, besides giving attention to sales and the delivery of goods. A definite idea of the splendid progress that has been made by the concern since that initial

period is conveyed in the statement that in the company's factories alone there are today employed fully 200 operatives, besides which a large corps of employes is retained in the general office, with assignment to various departments, order, credit, shipping, printing, advertising, sales etc.,—which go to make up a most vigorous and progressive industrial and commercial organization.

The following significant statement of comparison is worthy of reproduction in this connection: "From the one small factory which gave Ad-El-Ite specialties introduction upon the market, advancement has been made until now the company has five well equipped plants devoted to the production of everything needed for the paint specialty and woodwork finishing-material trade." In 1892 the firm gave exemplification of that significant progressiveness of policy that has significantly marked the enterprise during the entire course of its history, for, though the organization had been perfected not more than a year previously its one emissary to the trade had met with such success as to justify the employment of other traveling representatives, the number of which was further increased from year to year until at the present time a large and efficient force of commercial ambassadors exploit the interests of the company throughout all sections of the United States and the Canadian provinces."

The large and finely appointed general offices of the Adams & Elting Company are established in the building at 716-26 Washington boulevard, and since 1897 a well ordered branch office and supply station has been maintained in New York city, for the effective handling of the constantly expanding trade in the eastern and New England states. The original office and warehouse of the company in the national metropolis were at 247 Pearl street, but eventually these accommodations became inadequate to meet demands, with the result that, in 1913, the company established and equipped a model factory at 69-71 Washington avenue, Brooklyn, the eastern office being simultaneously removed to the celebrated Woolworth building, New York city.

In 1904 the company became notably reinforced in the personnel of its executive corps, by the acquisition of Howard Elting, who has since been secretary of the corporation and whose interposition as a master in systematization has proved of inestimable value in bringing the organization in general up to the maximum of efficiency. In 1910 a complete varnish plant was erected and equipped by the company, the same being established at Costner and Colorado streets, and the output of this factory has become a very important part of the extensive business controlled by the company. Of this department and its service the following statements have been written: "A special varnish to meet the exacting demands of individual purposes is made by means of the best mechanical equipment, the highest grade of materials being utilized and all operations are under the personal supervision of Robert Prince, who is an expert in this line of production.

The trade of the company through the Canadian provinces had grown to such volume that in order to give to customers in that extensive field the best possible service the company, in 1912, established a Canadian office and factory in the city of Toronto, where the office is at 17 Adelaide street, East and the factory at 81 Williams street. The general manufacturing plant of the company in Chicago is situated at 716-726 Washington boulevard. All of the Ad-El-Ite paint and varnish products are sent forth under the well known Ad-El-Ite rabbit trade-

mark, which is the signifying exponent of quality and responsibility, affording an absolute guaranty of the highest quality of products and the maximum working efficiency. One of the best known and most extensively used products manufactured by the company is the Ad-El-Ite paint and varnish remover, which represents a most valuable innovation in its line and proved a pioneer commercial article of splendid efficiency and of greatest practical value in connection with the paint and varnish industry. For the company's "Amel-ite" is made the consistent claim that it is a high-grade enamel that is even superior to the best imported brands, and the various wood stains manufactured by this progressive corporation have created a standard, the same being extensively used in many of the greatest furniture and allied manufactories throughout the United States. The company manufactures a full and complete line of standard paints, varnishes, enamels, stains, etc., and the general superiority of products proves the intrinsic essence of the most effective advertising. Among the more noteworthy specialties manufactured by the company are "Hygienic Kalsomine," "Ad-El-Ite Floor Varnish No. 103," "Naples Velvet Finish," and "Amel-Ite Enamel," designated as "the white that stays white." Ad-El-Ite Motor Carbon Remover, Ad-El-Ite stains, fillers, etc.

The personnel of its executive corps is as here noted: William P. Adams, president; Joseph C. Gale, vice-president, Howard Elting, secretary; and Philip L. F. Elting, treasurer and general manager. Warren Michael, sales manager, Frederick Arnold Farrar, advertising manager.

ZANGERLE & PETERSON COMPANY

The Zangerle & Peterson Company was organized in 1892, by Joseph Zangerle as President & Treasurer and Geo. Peterson Secretary.

The organization took place after the failure of the Northwestern Parlor Suite Company. Mr. Joseph Zangerle then a retired manufacturer in the same line of business and Mr. George Peterson a former employe of his, as a wood carver and designer undertook to rescue the stockholders in the old company from apparently a total loss.

Through their knowledge and skill in manufacturing, the unselfish devotion and tireless energy with the financial ability of Mr. Zangerle, they managed to put the new company on a sound financial footing from the beginning and have maintained that same standard ever since.

The Zangerle & Peterson Company has confined its manufacture to the production of medium and high grade Parlor Furniture frames and has established a nation-wide reputation as leaders in designs as well as reliability of its products.

Mr. Joseph Zangerle died in 1910. Since then his position in the business has been occupied by his son A. Arthur Zangerle, then a graduate of the University of Illinois, although a young man, he quickly acquired a general knowledge of the business and he is today recognized as a leading figure in this particular industry.

Mr. Joseph Zangerle was a native of Tyrol, Austria, where he had learned the cabinet maker's trade and soon after coming to this country started in the manufacture of Parlor Suites and Lounge frames, together with his brother Peter and some of his fellow countrymen, although in an exceedingly small way he man-

aged through economy and hard work to save money to build a good size factory on the site now occupied by the Bush & Gerts Piano Company, and in the course of time grew to be the largest factory of its kind. In 1887 he sold out to Haffner & Schoen, wholesale upholsterers and former stockholders in the business. He then retired from business until in 1892 when he joined with his friend George Peterson and formed The Zangerle & Peterson Company. After his death he left his widow Augusta Zangerle nee Stachle, who two and one-half years later followed him. Of his six children all surviving; the oldest, Joseph A. Zangerle only son of a former marriage, then follows: Mrs. Kathryn Diesel, A. Arthur Zangerle, Emma Zangerle, Mrs. Alma Fox and C. Edwin Zangerle.

RIVERSIDE IRON WORKS

As general machinists and founders this corporation controls a substantial and representative business and its well equipped industrial plant is situated at One Hundred and Sixth street and Buffalo avenue, South Chicago. The enterprise was founded in 1905, by the firm of Kinney, Schlinger & Kaufmann, and the original foundry was established at Ninety-fourth street and the Calumet river, removal to the present modern plant having been effected in 1908, the company having here purchased two acres of land and having erected for its purpose a modern industrial building in which the best of mechanical equipment and accessories were installed, the institution having an aggregate floor space of ninety-two hundred square feet in the foundry department, where electric cranes make possible the effective handling of castings that weigh up to twenty tons. The machine and pattern shops have an area of eight thousand, eight hundred square feet and the operative machinery throughout is of the most approved modern type. In the establishment is retained a force of nearly one hundred employes and the capacity of the plant is for the production of thirty-five tons daily. Receiving and shipping facilities are provided through the medium of a private switch track that accommodates ten cars and gives direct connection with the Pennsylvania Railway lines and the Indiana Harbor Belt Railway. The company specialized in the manufacturing of white-iron castings and castings for use in steel mills and blast furnaces. In the machine shops a general jobbing business is handled, and here also is manufactured a special and patented steam siphon, which is produced in sizes from two to six inches. The foundry is equipped for the effective handling of castings varying from ten pounds to twenty tons in weight, and here the special white-iron castings produced are made of a compound that makes the finished product too hard for machine working. Rudolph Kaufmann is president of the company and John H. Streeter is its secretary and treasurer and Ernst Maisac, general superintendent.

RUDOLPH KAUFMANN

Rudolph Kaufmann, president of the Riverside Iron Works, was born in Chicago, and after having duly profited by the advantages afforded in the public

schools he entered upon an apprenticeship to the moulder's trade, in the establishment of South Chicago Foundry. As a skilled artisan at his trade he eventually became general manager of the Preble Machine Works, and later he was made foundry superintendent of the Joliet Works of the Illinois Steel Company, at Joliet. Of this position he continued the incumbent until he resigned and became one of the founders of the Riverside Iron Works, as noted in the preceding article. Mr. Kaufmann has won advancement entirely through his own ability and efforts and has gained precedence as one of the substantial captains of industry of his native city.

JOHN H. STREETER

John H. Streeter, secretary and treasurer of the Riverside Iron Works, was born in Chicago, and to the public schools of his native city he is indebted for his early educational discipline. He initiated his busness career in a clerical capacity and has become known as a skilled accountant and executive, his association with the company of which he is now secretary and treasurer having been initiated in 1904, and his progressive executive policies having done much to further the success of the enterprise. Mr. Streeter is affiliated with the Masonic fraternity.

ERNST MAISAC

Ernst Maisac the general superintendent of the Riverside Iron Works is a native of Germany, born in Heilbron where he received his education and served an apprenticeship with the H. Vogleman Iron Works. Mr. Maisac came to the United States in 1881 and Chicago the same year, and entered the employ of the Preble Machine Works, with which company he remained until 1914 having advanced to the official position of Vice-president and general manager. This institution having met with a complete loss by fire in that year, he then associated himself with the Great Lakes Dredge & Dock Co., as master mechanic, at South Chicago, from which position he resigned to become general superintendent of the Riverside Iron Works.

STRAUS & SCHRAM

The first firm in Chicago to sell home furnishings on credit. The first firm in the United States to sell home furnishings on credit by *mail.*

It seems natural that among the thousands of new enterprises initiated in Chicago, that Straus & Schram, one of Chicago's leading home furnishing firms, should have been the first to sell furniture and furnishings to rich and poor alike on small weekly or monthly payment terms. And as Chicago grew, so their business grew and so this plan later developed into the first and today the great-

R. KAUFMANN

J. H. STREETER

ERNST MAISAC

est, exclusive home furnishing concern selling household goods by *mail* on credit.

Back in 1884 when Western avenue was the street car limits and our most exclusive residence district was where our loop now stands, a little 25 x 100 square foot store at old number 279 W. Madison street, opened its doors and offered an opportunity even to the very poorest to add comforts to their homes or completely furnish new homes on small weekly or monthly payments. Naturally, this new, liberal, broad gauged principle met with a ready response from good old fashioned honest folks. This little 25 square foot store grew and grew. In 1895 on the site of their present mammoth buildings, a 25,000 square foot store and building was leased. In 1911 a 25,000 square foot addition was necessary until today on this site, is housed one of the West Side's greatest stores. The handful of customers first served in the little store, have now grown into thousands and thousands. Many of the first customers still buy here, their children buy here, their friends buy here.

In 1901, they began offering these liberal credit terms to people living outside of Chicago—people whom they never saw. Their only requirement was honesty. It was just about at this time that even the cash mail order business was in its very first stages. It took confidence and courage to finance and develop a brand new industry.

However, the standard of service and value evolved by these men met a ready response. So this new business soon outgrew its little balcony quarters. The first mail order building leased was on Desplaines Street between Madison and Monroe, a two-story building of 10,000 square feet. The handful of bargains first offered in a little 16 page catalog grew to carload requirements, so the mail order department moved to the Central Manufacturing District into a large four-story and basement building of 50,000 square feet.

Here again the foresight of these progressive men was apparent. Altho the Central Manufacturing District at that time was over 90 per cent swamp, they had confidence that from these marshes would spring mammoth structures, a giant railroad terminal and transfer—branches of most every industry—a bank and a club. At that time all this was more or less a dream. Today it is a reality.

Time passed. Each year added to Chicago's accomplishments—to the Central Manufacturing District's growth and to the prosperity of Straus & Schram. In 1910 an additional building of 50,000 square feet was added; in 1916 another building of 120,000 square feet was necessary. Until today the Straus & Schram mail order buildings are among the largest in the great Central Manufacturing District.

The owners are modest—energetic men who are still actively engaged in the management of their business, yet play no unimportant part in Chicago's civic affairs.

Mr. David Straus still greets his old friends and customers in their big Madison Street Retail establishment—calls many of them by their first name and knows intimately their family.

Mr. Harry S. Schram and Mr. Elmer E. Schram are the active managers of the mail order business—working co-operatively and harmoniously. The problems and difficulties of so unique and original a selling plan have been met and mastered.

Just as Chicago has grown, so the growth of this plan of furnishing homes on

liberal monthly credit terms has grown. Today in every town, village and city of America, dwell men and women who owe their home happiness and contentment to the little store that first opened its doors back in 1884. The little 16 page catalog has grown into an encyclopedia of home furnishings to which some 268 great factories contribute their best productions. The first underlying principle—that honesty of statement, that generous impulse of value—that pledge of service is still behind every single transaction.

The confidence these broad-gauged men had in the development of Chicago and in the honesty of Chicagoans has reacted in an institution closely allied with the growth of Chicago and a monument to Chicago's enterprise and initiative.

MEILICKE CALCULATOR COMPANY

In the manufacturing of the Meilicke Calculator and other remarkably efficient devices of inestimable value in connection with commercial and general business activities, this Chicago corporation holds a place of unique precedence, the company having been organized April 30, 1913, by Carl A. Meilicke, who, with about twenty-five basic patents on his valuable inventions, initiated the manufacturing of these various devices, he being president of the company which bears his name and which is incorporated with a capital stock of five hundred thousand dollars. E. J. Meilicke is vice-president of the company; L. D. Kelleher is secretary; and C. D. Meilicke holds the office of treasurer, the directorate of the corporation including a goodly number of representative Chicago bankers and other business men of prominence and influence. To the progressive founder of the business, however, has been left the heavy responsibility of supervising the production and distribution of the devices manufactured, and the unqualified success of the enterprise fully attests his executive and initiative ability, as well as his fine inventive talent. Mr. Meilicke has been indefatigable in his application and his course has been marked by constructive thought and action that have brought about the development of an industrial enterprise of maximum importance in its special field.

As early as 1902 Mr. Meilicke, while cashier of the First National Bank of Falda, Minnesota, began a series of experiments in the devising of a calculator of simple and practical order, and after resigning his position as cashier he turned his attention to the lumbering business, at Hanley, Saskatchewan, Canada, of which vital little city he was elected the first mayor, at the time of its incorporation. While thus finding imperative demands upon his time and attention he still found opportunity to continue his inventive experiments and after producing various models he finally perfected the remarkable calculator which bears his name and which is now manufactured on an extensive scale. In 1912 Mr. Meilicke came to Chicago, where he so effectively demonstrated the value of his invention as readily to enlist capitalistic co-operation and to organize the company of which he has since been president and general manager. The growth and far-reaching expansion of the business has been almost phenomenal within the comparatively few intervening years, and the products of the company's factory are now in daily use throughout the civilized world, with such representation in

virtually every city and town in the United States, the devices being of utmost value in facilitating the work of all manner of business offices, including those of banks, insurance companies, manufacturing establishments, railroads, wholesale houses, department stores, etc. The large and handsomely appointed general offices of the company are established in suite 412-20 in the Thompson building, 350 North Clark street. A large and efficient staff of traveling salesmen represent the company throughout the United States and Canada, and a number of foreign sales representatives also exploit the interests of the concern. It is not within the compass of this review to attempt description of the various devices manufactured by the Meilicke Calculator Company, for such data are properly given in catalogues and bulletins issued by the corporation, but from such literature a few significant quotations may consistently be made:

Relative to the Meilicke Calculator the following statements are given as indicating its scope of operation and its great efficiency and value: "A machine that computes time, interest and discounts, gives the number of days between any two dates, indicates date of maturity and detects whether maturity date is a Sunday, Saturday or holiday. A valuable asset to bankers, merchants, companies dealing in insurance, real estate, lumber, etc., and to any manner of business involving interest-bearing transactions. A machine that eliminates four hard brain problems with one single movement of the hand. In operating the machine all that is necessary is to have it set for the current day of business and then to turn to the date when the note will be due or the date from which interest is to be computed, in case accrued interest is wanted, and the figures are there immediately. The Meilicke Calculator is synonymous with simplicity. It is simple in construction, simple to understand, simple to operate. It has found its place in the business world because of the time and money it can save for any commercial enterprise which involves interest-bearing transactions."

The list of important concerns in Chicago that use the Meilicke calculators is one that gives most emphatic endorsement to the value of the device, and the same holds true in connection with the many patrons who employ the machine in other important cities of the Union. From the Chicago list may be noted a few: Corn Exchange National Bank; People's Trust & Savings Bank; State Bank of Chicago; Commercial Union Assurance Company; Union Trust Company; Central Trust Company; Rand, McNally & Company; Lyon & Healy, and many of the large commercial houses and industrial corporations.

The Meilicke Calculator Company manufactures also dictaforms, pay-roll devices, price checkers, telephone lists, yard-goods calculators, the Meilicke dental ledger, the Meilicke tariff devices; the Meilicke pricing and stock-keeping devices and inventory devices, and many other time and money saving office appliances, each representing the maximum of efficiency.

CARL A. MEILICKE

Carl A. Meilicke, founder and president of the Meilicke Calculator Company, was born in Windom, Minnesota, on the 24th of November, 1880, and he received his early education in the excellent schools of the Gopher state. He finally be-

came cashier of the First National Bank of Falda, Minnesota, and of his career since resigning this position sufficient outline has been given in the preceding article. On his inventions he has obtained patents both in the United States and foreign countries, and as a manufacturer and man of affairs in the western metropolis he has made and is making a record of splendid achievement. He holds membership in the Chicago Association of Commerce and is similarly identified with other representative organizations, including a number of national importance in connection with the manufacturing of office appliances.

A. J. CROPP & COMPANY

The concrete industry has become one of great importance in connection with material development and progress, and in bringing the maximum of efficiency in the utilization of concrete in all manner of structural and industrial enterprise A. J. Cropp & Company has played no insignificant part, as there is all of consistency in the following statement: "In the Cropp Concrete Mixer we offer you a machine that will do more work, better work, with less help and at lower maintenance and operating cost than any other machine on the market." This representative Chicago firm is engaged in the manufacturing of concrete mixers for building contractors and road and paving contractors, and the acknowledged superiority of the Cropp mixers constitutes the basis upon which has been built up a most substantial and important industrial enterprise, these mixing machines being the invention of Andrew J. Cropp, who is the executive head of the firm which bears his name.

Mr. Cropp was for a number of years successfully engaged in concrete contracting business, and in 1905 he began the series of experiments which resulted in the perfecting and patenting of the concrete mixers that bear his name, and which are conceded to be the best machines for the purpose on the market. The Cropp mixers are now used by the leading concrete contractors throughout the United States. In his personal experience as a contractor Mr. Cropp came to a full realization of the fact that the continuous mixer and one-batch mixer were defective in satisfactory operation, and to overcome the objectionable features that thus retarded effective service in the line, he brought his inventive talent to bear, and finally perfected a mixer of remarkable versatility and efficiency. Prior to 1909 the Cropp mixers were manufactured by the Standard Scale & Supply Company, on a royalty basis, and in the year mentioned Mr. Cropp effected the organization of the present firm of A. J. Cropp & Company, which has since manufactured the mixers upon a constantly expanding scale, and which has brought the machines into use not only in the United States, but also in a number of foreign countries. The well equipped manufacturing plant is established at 1721 West Grand avenue, where is utilized a ground area fifty by one hundred and fifty feet. Among the representative Chicago contractors who operate one or more of the Cropp Concrete Mixers may be mentioned the following named: Paschen Brothers, McCarthy Brothers, Matthey Rauen, James Shelton & Company, Henry Erickson Company, S. M. Nielsen, Jens Jensen & Son, Minke & Tilberg, McKeon Brothers, Simpson Construction Company, Moses Construction

Company, George B. Swift & Company, Guy & McClintock, Haeffer & Company, Thomas Gage, and Anderson & Stanberg.

The Cropp mixers are manufactured in various models and sizes, to meet varying requirements. From descriptive matter issued by the firm may be taken the following extracts, though the province of this publication proscribes detailed descriptions in any instance:

"An important feature of the Cropp Mixer that appeals to practical men is its simplicity. We have absolutely done away with all complicated parts, and the machine is practically trouble-proof. The mechanical features which we have added in order to secure greater efficiency do not get out of order. There are only two reductions from engine to mixer—and it will readily be seen what an advantage this gives over other machines. The Cropp is a low-charging mixer, and we boldly claim it to be the only successful low-charging mixer on the market to-day. The charging platform is only eighteen to twenty-four inches high. This does away with hoisting hoppers and other trouble-makers. This low-charging device is the most important improvement ever put on a concrete mixer, and is the greatest time and labor saver known to machines of this class. Low-charging means that as much material can be put into the machine at each charge as though the machine were of the old high-charging type. The Cropp mixer will do this, and is guaranteed to hold more material and never spill. Every contractor knows that the real bone and sinew of a concrete mixer is the mixing device, for if this is slighted or falls below the standard of efficiency, the machine simply can't be what it ought to be. With this in mind, we have equipped our mixer with deflecting blades, placed at each end of the mixing chamber. These blades force the material to the center, where it is immediately caught by a V-shaped plow, which again throws it back to the ends of the drum. This operation is repeated in rapid succession, the batch never being still for a second. The result is, the material is evenly and thoroughly mixed—absolutely perfect. Our discharging device represents a method found on no other machine, and it is so much better than any other that there can be no comparison. It will discharge a wheelbarrowful at each revolution, or a greater amount can be given if desired. The discharge is under the direct and positive control of the operator, who can increase or decrease the quantity as occasion demands. With this device the material can be discharged into wheelbarrows as rapidly as the ordinary type can discharge into a bucket or discharging hoppers."

It may further be said that the Cropp mixer is manufactured in two styles, designated as single and double chambers. The single chamber is built in four sizes and the double chamber in two sizes, thus giving six separate and distinct sizes in which the machine can be secured. Full descriptive literature is issued directly from the offices of the firm and may be had upon application.

ANDREW J. CROPP

Andrew J. Cropp, inventor of the valuable machine of which mention is made in the foregoing context, was born at Romeo, Macomb county, Michigan, on the 23rd of November, 1863, where he was reared to manhood and acquired his educa-

tion. He was twenty-five years of age at the time of his removal to Chicago. Thereafter he learned the trade of carriage-making, and for a term of years he was employed at his trade, in carriage and agricultural implement factories. Finally he did independent work as a carpenter and builder, and later he identified himself with concrete construction enterprise, in which connection he served as foreman for several Chicago contractors, besides becoming an independent contractor. Of his invention and development of the concrete mixer that bears his name adequate mention is made in the preceding article. He is still employing his inventive genius in the study and solution of problems of industrial order, and the results of his application are certain to be of a value equal to that of the important concrete mixer of which he is the inventor and manufacturer at the present time.

THE UNITED STATES GYPSUM COMPANY

The indubitable consistency and value of concentration in industrial enterprise under modern conditions have had significant proof in the record made by this important corporation, which represents the consolidation of about thirty-five concerns previously operating in an independent way, for the efficiency of the new organization has been such that from an aggregate output of gypsum products of less than two hundred and fifty tons in 1900, on the part of all companies engaged in this line of business in the United States, the amalgamated corporation whose title introduces this paragraph carried for the year 1916 an output of one million tons—four times the volume of that produced by all individual or independent operators in 1900. This statement bears its own significance; and it is further a matter of gratification to note that the main offices of this corporation are established in Chicago, and that operations are now based on a capital stock of ten million dollars. Prior to the organization of this company gypsum or hard-plaster products were not extensively used, though the mining of gypsum has been prosecuted in various states of the Union for a long term of years. The energy and progressiveness of the officials of the United States Gypsum Company has brought about the remarkable development in the use of the gypsum products, especially in contradistinction to the old-time lime products for wall finishings. An intense and well-ordered educational campaign was instituted on the part of the company, and the result has been the development of a really great industrial enterprise, with incidental growth of popular appreciation of and demand for the unexcelled gypsum products. The company conducts extensive operations in the manufacture of wall plaster, wall board, partition tile, floor and roof tile and all other gypsum products, and offices are maintained in leading American cities, including New York, Cleveland, Buffalo, Detroit, Minneapolis, Kansas City, Denver and San Francisco, as well as in Canadian industrial and commercial centers.

The United States Gypsum Company was incorporated in December, 1901, with an authorized capital stock of seven and one-half million dollars, and with the following named officers: B. W. McCausland, president; G. S. Emery, vice-president; Emil Durr, treasurer, and J. C. Burch, secretary. The corporation owns gypsum mines and other valuable incidental properties in various states

of the Union, and its general manufacturing facilities are of extensive order, the ramifications of the business extending throughout the United States and into the various Canadian provinces. The personnel of the executive corps of the company at the present time is as here designated: S. L. Avery, president; S. Q. Fulton, vice-president and treasurer; O. Karde, second vice-president, and S. Meservey, secretary.

ACME BOILER & TANK COMPANY

The thoroughly modern industrial plant of this company is established at the corner of Forty-eighth and Morgan streets, and here are to be found the most approved machinery and general facilities for the manufacturing of tanks, stacks, breechings, roofing kettles, and for general steel-plate construction. A specialty is made of boiler repairing, and the establishment has a full complement of apparatus for oxy-acetylene welding and cutting.

The Acme Boiler & Tank Company had its genesis in a modest private enterprise established in 1908 by James Nolan, the executive head of the present company. In a small building at 4406 Langley avenue he began the repairing of boilers, tanks, stacks and similar products, and efficiency of service brought about a substantial development of the business. After the lapse of two years Mr. Nolan removed to larger and more convenient quarters, at 3544 Cottage Grove avenue, where he utilized three thousand square feet of floor space. In 1911, to provide adequate accommodations for the growing enterprise, he bought sixty-seven hundred square feet of ground at 4738-40 Wentworth avenue, where operations were continued until 1917, when was erected and equipped the present modern plant, located on a tract of land which Mr. Nolan leased for the purpose, and which has an area of twenty-one thousand, eight hundred square feet. For the purpose of providing adequate and direct transportation facilities a switch track was installed on the premises, the same being two hundred and eighteen feet in length, and connecting with the Indiana Harbor Belt Line railroad. The most thorough standard equipment marks all departments of the plant, and the company does an appreciable amount of structural steel work on contract, designs for the same being furnished by those who place the orders. Facilities are such that steel plate work from one-eighth to one-half inches in thickness can readily be handled. Here are constructed tanks and boilers of capacities ranging from sixty to thirty thousand gallons, and even larger sizes are produced when required. The average force of employes numbers thirty-five in the plant.

In 1917 the Acme Boiler & Tank Company was incorporated under the laws of Illinois, and its officers are as here noted: James Nolan, president and treasurer; William Greunke, vice-president, and Theodore Petersen, secretary. The company has membership representation in the National Boiler Manufacturers' Association.

James Nolan, founder and president of the company described in the foregoing article, was born and reared at Stoco, Ontario, Canada, and has been a resident of the United States since 1891. In 1897 he found employment in the James Burt Boiler Works, at Hancock, Michigan, and he continued his residence in the Wolverine state until 1902, when he came to Chicago and associated himself

with the Hamler Boiler & Tank Works. Later he was in the employ of the Kittor Boiler & Tank Works, at Aurora, this state, and upon his return to Chicago he became foreman in the shop of the McGregor Boiler Works, which position he resigned in 1908 to engage in independent business, as indicated in the preceding article. He is an expert in his field of industrial enterprise, and is known as a progressive and substantial business man of the western metropolis.

THE ILLINOIS BRASS MANUFACTURING COMPANY

The marvelous development of the automobile industry in America has made possible also the substantial upbuilding of many subsidiary industrial enterprises, and the company designated above has from a small inception advanced its manufacturing business until the same is now of broad scope and importance, in the manufacturing of high-grade automobile parts and accessories, to all of which is applied the name or trademark of "Illinois," a brand that has become known as a guaranty of absolute reliability and fine workmanship. Among the diversified products issued from the large and well equipped plant of the Illinois Brass Manufacturing Company may be mentioned ball-socket anti-rattlers and brake rod support anti-rattlers for Ford cars, auxiliary front radius rods, internal brake shoes, fibre speedometer gears, radiator caps of varied sizes and styles, hub caps, oil gauges, poppett valves, cut-out valves, bronze bushings, gas-tank caps and automatic wind-shield hinges. A specialty is made of the wind-shield hinges, which are of original design and construction and which are recognized as representing the acme of perfection in construction and operation.

The plant of the Illinois Brass Manufacturing Company occupies a modern factory building at 226-232 West Ontario street, where is utilized a floor space of nine thousand square feet and where is retained an operative force of about thirty employes, the majority of whom are skilled mechanics. The company was incorporated on the 1st of January, 1912, and with the following officers: Frank Parizek, president; R. C. White, treasurer; and Josephine Parizek, secretary. The president officers are Frank Parizek, president, and Harry P. Houghton, secretary. The original headquarters of the modest factory established by the company were at 17 South Desplaines street, and there, in connection with a general brass jobbing business, was initiated on a minor scale the manufacturing of automobile accessories, the growing business eventually necessitating the increasing of the factory accommodations until at this location forty-five hundred square feet of floor space were utilized. Mr. Parizek, the founder and executive head of the company, is himself an expert mechanic, and in the early stages of the operations of the new enterprise he and two employes constituted the entire mechanical force. In 1915 removal was made to the present eligible factory, the equipment of which is of the most modern type, and here the business has shown a continuous expansion, owing to the technical ability, discrimination and good judgment brought to bear by the progressive head of the institution. From a mere local business the trade has expanded until it now extends into all parts of the United States and Canada.

H. P. HOUGHTON

F. PARIZEK

FRANK PARIZEK

The president of the Illinois Brass Manufacturing Company was born in Bohemia, on the 2d of April, 1880, and is a son of Frank Parizek, Sr., who came with his family to America and settled in Chicago in 1882. The subject of this sketch here attended the public schools until he was twelve years old, when he found employment in the shop of a local tinsmith. A year later he entered the employ of the Stewart & Clark Manufacturing Company, makers of the famous Stewart speedometers, and here he gained valuable mechanical experience. After two years he became an employe in the establishment of the Turner Brass Works, with which he remained nine years, in the meanwhile acquiring an expert knowledge of brass finishing. The ensuing three years found him employed by the John Davis Company, manufacturers of steam specialties, and thereafter he was in the employ of J. J. Ryan, brass manufacturer, until 1906, when he put his energy, ability and savings to good use by establishing an independent business, under the title of the Parizek Brass Works. The peculiar sound and form of his patronymic, as viewed by the average American, led him shortly afterward to change the title of his business to the Quincy Brass Company, this being an appropriate name by reason of the fact that at the time he had his shop on Quincy street, where he occupied about nine hundred square feet of floor space. In 1908 he removed his little factory to 132 South Clinton street, where he placed in commission four thousand square feet of floor space and was enabled to expand the scope of his operations. In that year the business was incorporated and he became president of the company, while Percy DeTamble assumed the position of treasurer. They developed a thriving business and in connection therewith retained about forty-five employes, the enterprise being largely a jobbing business of local order and principally in the manufacturing of automobile accessories. In 1909 the title of the corporation was changed to the Universal Wind Shield Company and at this juncture was initiated the special manufacturing of the superior automobile wind shields representing the invention and patent of Mr. Parizek. In 1910 removal was made to the corner of Sixteenth street and Prairie avenue, where twelve thousand square feet of floor space were secured and where the enterprise was made exclusively that of manufacturing of the wind-shields invented by Mr. Parizek, an average of thirty-five employes being retained. In 1912 Mr. Parizek made an advantageous sale of his interest in the business to the Universal Wind Shield Company, and soon afterward he organized and incorporated the Illinois Brass Manufacturing Company, of which he has since been the president. He is the inventor of the Illinois automatic wind-shield hinge, for use on limousines, coupes and automobile trucks, and the superiority of this device has gained to it and its inventor a national reputation, the while its manufacture and sale has proved an important part of the substantial business controlled by the company of which he is president. Mr. Parizek is also the founder and president of the General Brass Foundry, the plant of which is at 1364 West Randolph street, and this foundry is given over entirely to the manufacturing of brass goods for the exclusive use of founders, the corps of employes numbering about twenty. Both of these substantial industrial institutions are represented on the membership rolls of the National Association of Automobile Accessory Jobbers and Chicago Association of Com-

merce. Mr. Parizek has exceptional inventive talent along mechanical lines and has been granted seven distinct patents on devices invented by him. He is affiliated with both the York Rite bodies of the Masonic fraternity and is to be consistently designated as one of the sterling and progressive young captains of industry in the western metropolis.

November 22, 1902, recorded the marriage of Mr. Parizek to Miss Josephine Kotrba, of Chicago, and they have two sons, Edward F. and Frank J.

KEWAUNEE MANUFACTURING COMPANY

With its finely equipped and extensive manufacturing plant established at Kewaunee, Wisconsin, this representative industrial corporation maintains in Chicago general sales offices and display rooms, and thus becomes specially worthy of consideration in this publication. The Kewaunee Manufacturing Company is one of the largest and most important of its kind in the United States, and specializes in the manufacturing of scientific furniture exclusively. In the splendid plant of the company are turned out the finest types of laboratory furniture, including specially that primarily applicable to use in laboratories in which is conducted research in the sciences of physics, chemistry, biology, agriculture, domestic art and science, electrical laboratories, art departments, industrial laboratories, etc., and also the highest grade of special furniture and equipments for manual training schools or departments. The products are now extensively used in the various laboratories and institutions of the kinds above noted, not only in the United States, but also, and in a cumulative way, in foreign countries. Branch offices and display rooms are established in New York City and Columbus, Ohio, and the company has direct representation also in the following named cities: Minneapolis, Minnesota; Denver, Colorado; Dallas and El Paso, Texas; New Orleans, Louisiana; San Franciso, California; Atlanta, Georgia; Little Rock, Arkansas; Salt Lake City, Utah; Baltimore, Maryland; Kansas City, Missouri; Oklahoma City, Oklahoma, and Portland, Oregon. From leading educational institutions in all parts of the country have come the strongest of commendation of the laboratory equipment manufactured by this company, and it is specially gratifying to note that the concern thus makes a most valuable contribution to the facilities of all manner of schools, both those of public order, and also those of higher learning.

The factory buildings of the company, at Kewaunee, constitute a thoroughly modern industrial plant and afford sixty thousand square feet of floor space, the while an additional ground area of five acres is used for lumber yards, tempering rooms, dry kilns and the railroad tracts that afford the best of direct transportation facilities. The special credit for the development of this important and well-organized industrial and commercial enterprise is to be given to Frank H. Wiese, who effected the organization of the corporation, and who has been from the beginning its secretary and general manager.

The Kewaunee Manufacturing Company was organized in 1907, and is incorporated under the laws of Wisconsin, its present capital stock being sixty-five thousand dollars, and its business having grown in volume from $20,835, in 1908,

to an output in excess of three hundred and fifty thousand dollars in value in 1917. The number of employes at the initiation of operations was only eight, and in the factory at the present time the force of employes number one hundred and thirty. The company purchased the plant and business of the Kewaunee Casket & Manufacturing Company and effected a reorganization of the business under the present title. The company has membership in the National Furniture Manufacturers' Association. The personnel of the executive corps has remained unchanged from the time of organization, and is briefly to be noted as follows: John M. Borgman, retired capitalist, of Kewaunee, president; Edward M. Rice, M. D., a leading specialist in the city of Milwaukee, vice-president; Frank H. Wiese, the founder of the company, secretary and general manager; and John L. Haney, of Kewaunee, a representative capitalist, is treasurer. Charles G. Campbell, the general sales manager, has charge of the Chicago sales offices and display rooms.

FRANK H. WIESE

Frank H. Wiese, secretary and general manager of the Kewaunee Manufacturing Company, was not only the organizer of this noteworthy industrial corporation, but has also been the prime force in the upbuilding of its large and well-organized business. He has perfected the most pleasing and effective relations of mutual interest between the company and its employes, the latter looking upon him as their personal friend. Before organizing the company, of which mention is made in the preceding context, Mr. Wiese had made, while associated with the Hamilton Manufacturing Company, of Two Rivers, Wisconsin, an intensive study of the laboratory furniture business, and had developed the most effective appliances of this order for use in schools and colleges.

Frank Henry Wiese was born at Two Rivers, Wisconsin, on the 20th of May, 1867, and is a son of Louis and Sophia Wiese. He attended the public schools until he had attained to the age of twelve years, and his broader education has been that gained under the direction of that wisest of all head-masters—experience. In this connection it is specially interesting to recall the service which he has given in later years in promoting educational work by the introduction of laboratory furniture and equipment of the finest type. As a youth he began work in wood-working factories, and he developed exceptional skill as a mechanic. He finally entered the employ of the Hamilton Manufacturing Company, at Two Rivers, Wisconsin, and it was in this connection that he initiated his study, research and experimentation in the production of laboratory furniture and equipment for colleges, high schools and industrial and private laboratories. At the instance of A. H. McConnell, president of the Central Scientific Company, the business of which corporation was purchased by the Kewaunee Manufacturing Company soon after its organization, so that the direct results of the former work of Mr. Wiese were carried forward to the new company when he enlisted the requisite capital to form the same. It is not inconsistent to say that Mr. Wiese is the father of the industry of producing commercial laboratory furniture on a large scale in the United States. He developed the toe space, which permits the laboratory student to stand in a natural position while working at a commercial

desk, or with other laboratory furniture where it is necessary to stand while doing work. He developed also the long-spout gas cock, which takes a hose varying from one-eighth to five-eighths inches and forms a vacuum pocket between each two of the serrations that are found on the gas cock. Another of his developments is the disappearing pantry cock, which is used in sinks that may be covered over, so that the full use of the table top is available when the sink is not used. He has evolved also many new designs in laboratory furniture—equipment to augment the facility of work done in laboratories—and all of these developments have been given to the school world without the attempt on his part to patent their various features, or to curb their common use. Taking advantage of the natural surroundings of his company's factory, at Kewaunee, Mr. Wiese has been able to introduce, through a thorough system of advertising, the Kewaunee laboratory furniture in fully six thousand high schools, colleges and industrial laboratories throughout the United States, and this has resulted in the steady and well-ordered growth of the business of the Kewaunee Manufacturing Company. So notable has been the expansion of the business that for the past several years the capacity of the manufacturing plant has been taxed, though in the meanwhile additions have been made to the same from time to time.

He assisted in the organization of Kewaunee Lodge, No. 296, Ancient Free and Accepted Masons, at Kewaunee, in 1908, and served as its master the first three years. On the 26th of December, 1891, he received his initial degree of entered apprentice in the Masonic lodge, No. 200, at Two Rivers, Wisconsin, and with the same he continued his affiliation until he became a charter member of the lodge at Kewaunee. He is affiliated also with Manitowoc Chapter, No. 65, Royal Arch Masons, and is a non-resident member of the Lakeside Country Club of Manitowoc county, Wisconsin.

KAESTNER & HECHT CO.

The firm of Chas. Kaestner & Co. was established in Chicago in 1863 by Charles Kaestner. Following the establishment of the company, a specialty was made of building machinery for breweries, malt houses, distilleries and starch factories. Beginning when the art of brewing and distilling and the appliances for accomplishing operations were of a crude and imperfect character, they have not only followed but lead in improvements of old and the invention of new machinery in this line of trade and manufacture. Continued experience gained in the development of the business due to its rapid expansion, and general recognition in this particular field, enabled many notable improvements to be perfected, among the most noteworthy being a non-explosive malt mill, and the first application of direct electric drive in this particular field.

With the development of work in this particular field, the company made special efforts to develop patronage for paint grinding and mixing machinery, which is followed at the present time.

After being established in 1863 by Mr. Chas. Kaestner, the business was conducted jointly by Mr. Chas. Kaestner and Mr. F. A. Hecht, Sr., for a considerable period of time. The firm of Kaestner & Co. was formed in 1898 and

the business was conducted by F. A. Hecht along the same lines as the original company, with the addition of electric elevators made necessary by the rapidly increasing building and the demand for a responsible concern's product by Chicago building owners.

In 1909, the Kaestner & Hecht Co., was incorporated owing to the disposal of the stock in Kaestner & Co., by F. A. Hecht, Sr., the business being conducted by E. F. Hecht, a brother of F. A. Hecht, as president.

During this period, the gradual decline of the brewery business throughout the country caused a lessened output in this industry, with the result that a more direct appeal was made to the electrical elevator trade, so that at the present time the business is exclusively confined to the elevator business with the exception of some special machinery.

In 1916 the administration of the company was taken over by F. A. Hecht, Jr., a grandson of Chas. Kaestner, and is being conducted by him today.

The Kaestner & Hecht Co., since its conception, has been connected with the development of Chicago and has earned a reputation for fair dealing and the ability to supply Chicago buildings with a Chicago-made product which meets the requirements of modern buildings of various types.

The present organization has its main office in Chicago, with branches in Detroit, Milwaukee and St. Louis. The elevator business is of a national character and the product of the company is disposed of to many prominent buildings throughout the country.

FINDEISEN & KROPF MANUFACTURING COMPANY

The manufacturing plant of this well ordered industrial corporation is situated at the corner of Twenty-first and Rockwell streets, and the concern is one which adds its quota to the industrial and commercial supremacy of the western metropolis. The business of this company had its inception in 1893, when operations were initiated in a modest factory at 132 West Lake street, the number of employees at the beginning having been about seven. The enterprise was founded by the firm of Durfee & Findeisen, but in February, 1894, Oswald F. Kropf purchased a half-interest in the newly established business, whereupon the present title of the Findeisen & Kropf Manufacturing Company was adopted. With the substantial expansion of the business, removal was made to more ample quarters, in a building at the corner of Randolph and Ann streets, where operations were continued several years, the site of this factory having been the property of the late Mrs. Hettie Green.

In the early '90s the company purchased a tract of land five hundred and fifty by two hundred and seventy feet in area, at the corner of Twenty-first and Rockwell streets, and here was erected the present fine industrial plant,—a substantial four-story building of the best type of mill construction and virtually fireproof. The factory utilizes about one hundred and seventy-five feet of floor space and the broad scope of the industry is indicated by the fact that the number of employees at the plant averages fully eight hundred persons.

This company has developed a large and substantial enterprise in the manufacturing of woodwork for plumbers, besides which a prosperous business has

been developed in the manufacturing of the celebrated Rayfield Carburetor, which is extensively used in the outfitting of automobiles. The company is the only one in Chicago engaged in the manufacturing of high-grade wood parts for plumbing fixtures, and in this field Findeisen & Kropf woodwork establishes the ultimate standard of excellence. The company is incorporated under the laws of Illinois and is a close corporation.

From a trade brochure issued by the company are taken the following statements:

"Our shops are amply equipped with the best of machinery for the working and finishing of wood, and we also give careful attention to the selection of our material, which is cured in our own yards and dried in our own kilns. Every detail in the production of Findeisen & Kropf woodwork is handled in our own shops, and here every provision has been made for good work, even to the cleansing

GENERAL OFFICES AND FACTORY

of air and machinery by powerful fans, which draw all dust and shavings direct to the great boilers in our power house. Heat and fresh air also are supplied by our own fan system and, with open land on every side, with bright daylight and sunshine in abundance, our operators are able to do their work under most favorable conditions. The result is sound, durable woodwork, made by a process that is clean every step of the way and that insures thorough sanitary conditions. adequately meeting the great demand of modern industrial provisions. Our brass shop is equipped with the best modern machinery for the manufacturing of all fixtures, valves and trimmings used for our woodwork, and here also is manufactured a comprehensive line of plumbers' brass goods."

FREDERICK FINDEISEN

Frederick Findeisen, president of the Findeisen & Kropf Manufacturing Company, has gained place as one of the substantial exponents of industrial enterprise in Chicago and also as a liberal and progressive citizen. He was

born at Gaggstadt, Wurtemberg, Germany, on the 14th of February, 1850, and is a son of John George and Margaret (Walther) Findeisen. He was afforded the advantages of the excellent schools of Kirchberg, in Wurtemberg, and also took a special course of study in drafting and designing. In May, 1864, he entered upon an apprenticeship to the trade of wagon and carriage building, and his service of three years made him a skilled artisan in this line. In the summer of 1870 Mr. Findeisen came to the United States, and in July, 1876, he engaged independently in business by establishing a carriage and wagon shop at Northwood, Iowa. There he continued operations until December, 1884, when he became associated with his brother William in establishing a wagon and harrow factory at Fergus Falls, Minnesota. Two years later he organized the Fergus Falls Wagon Company, and with the same he continued his connection until 1890, when he became associated with J. H. Featherstone in leasing and operating the flouring mill at Fergus Falls. In the same year he sold his interest in the business to his partner and he then came to Chicago and took a position with the Weber Wagon Company. This alliance continued until January 1, 1892, when he formed a partnership with J. H. Durfee and engaged in the manufacturing of plumbers' woodwork and cabinet ware. Of his career since that time ample record is given in the foregoing article.

In politics Mr. Findeisen maintains an independent attitude, he is affiliated with the Independent Order of Odd Fellows, and he and his wife are communicants of the Lutheran church.

On the 25th of December, 1879, at Charles City, Iowa, Mr. Findeisen wedded Miss Evelyn Palmer Shaw, and they have six children,—Grace M., Etta M., Florence S., Charles Walter, Eugene R. and Frederick J.

OSWALD F. KROPF

In a preceding article is made notation of the year in which Oswald Frederick Kropf became one of the interested principals in the Findeisen & Kropf Manufacturing Company, of which corporation he is secretary and treasurer and to the development and upbuilding of the extensive business of which he has contributed much, as an executive of marked initiative and constructive ability.

Mr. Kropf was born in Madison, the fair capital city of the state of Wisconsin, and the date of his nativity was March 11, 1867. He is a son of the late August and Wilhelmina (Paunack) Kropf, sterling pioneers of the Badger state.

Mr. Kropf was afforded the advantages of the excellent public schools of his native city, and after leaving school he took a clerical position in the State Bank of Madison. At the age of nineteen years he had so effectively demonstrated his business ability that he was tendered and accepted the office of treasurer of the Stoughton Wagon Company, of Stoughton, Wisconsin. He later came to Chicago and since January, 1894, he has been actively identified with the important industrial enterprise conducted by the company of which he is secretary and treasurer.

Vigorous and loyal in his civic attitude, Mr. Kropf is found aligned as a supporter of the cause of the Republican party, he is affiliated with the Masonic fraternity, and the principal clubs in which he holds membership are the Union League, the Chicago Athletic, the Exmoor Country, and the Delavan Lake Country Club.

October 22, 1891, recorded the marriage of Mr. Kropf to Miss Martha Louise Johnson, of Chicago, and they have one child, Katherine Helen.

HANS LUNDQUIST MACHINE WORKS

With equipment of the best modern type, this establishment has developed a substantial industrial enterprise, the productive plant being situated at 233 West Schiller street. Under the title of the Spies Special Machine Works the business was founded in 1916. The new establishment was equipped with the requisite machinery and accessories for the manufacture of special machinery, including automatic types, and for the designing and constructing of tools, dies, jigs, gauges, etc., for use in industrial institutions. In 1917 Frederick A. Spies, founder of the business, sold the plant and business to the present owner, Hans Lundquist, who had for two years previously held a position as factory manager, Mr. Spies having retired to engage in the manufacture of patented fire extinguishers and patented accessories for the use of manufacturing jewelers.

The plant of Hans Lundquist Machine Works is in operation day and night and controls a large and constantly increasing business, thirty skilled mechanics being employed in the establishment. Among many important contracts successfully filled by this concern was one involving the building of demonstrating models of a three-ton, four-wheel drive and steer motor truck, the perfected model being of the exact size of the ultimate operating truck, and constituting the basis on which will be founded the manufacturing of another important motor truck in Chicago. In 1917 the Lundquist Machine Works designed and built three rotary gas engines, one semi-rotary gas engine and one rotary valve gas engine. The company has filled also contracts on complicated telephone switchboard work. For the Spies Manufacturing Company, organized by Frederick A. Spies, as intimated in the preceding paragraph, the Lundquist works constructed the only machine yet built in this country for the manufacturing of a full line of jewelers' scroll-saw blades. The company is at the time of this writing busily engaged in the making of tools and dies for the use of the Joy Motor Truck Company of Butte, Montana, and this preliminary work is being done under the direct supervision of Mr. Joy, the inventor of the truck that bears his name. The Lundquist establishment has turned out also work of important kind for the Railway Supply Company, the Kellogg Switchboard & Supply Company, and for A. T. Nogardy, of Wichita, Kansas, a well known designing and supervising mechanical engineer of eminence in his profession.

The factory of the Hans Lundquist Machine Works utilizes eight thousand square feet of floor space, and in all departments efficiency of service is made the watchword.

Hans Lundquist was born and reared in Sweden, where he received excellent

educational advantages, including six years of collegiate study. In 1905 he was graduated with the degree of Mechanical Engineer, in the Archeo Technical College, the leading institution of its kind in Sweden. Thereafter he was employed in the experimental department of a telephone manufactory in his native land, and he then came to the United States and found employment in the engineering department of the old important Walworth Manufacturing Company, of Boston, Massachusetts. One year later he took charge of the factory of the Elliott Addressing Machine Company, in the same city, and about a year later he accepted the directorship of the special machine designing and building department of the United Shoe Machinery Company, of Boston. Still later he was for eight months engaged in the experimental department of the Westinghouse Electrical Manufacturing Company, of Pittsburgh, Pennsylvania, a place where he resigned to assume that of supervisor of a special department in the works of the Union Switch & Signal Company, in the same city, after fulfilling his commission in this connection Mr. Lundquist was retained in the designing and developing of special electrical devices and apparatus for the Electric Specialty Company, of Pittsburgh.

In 1913, he came to Chicago and engaged independently in the practice of his profession, as a consulting Mechanical Engineer, his services as an expert having been retained by a number of representative industrial concerns of the western metropolis until 1915, when he directed his attention exclusively to the perfecting of machines and tools required by the Spies Manufacturing Company. At this juncture he became general superintendent of the well ordered factory which he later purchased and which he now conducts with characteristic ability and progressiveness.

Mr. Lundquist is the inventor of the Lundquist milometer, an automatic accessory that has been accorded a most gratifying reception and which is now being manufactured and marketed by the respective purchasers of designated patent-right districts throughout the country. He has invented in the course of his active career many valuable mechanical devices and special tools, especially during the period of his service with the Westinghouse Company, and as a matter of course these various inventions were assigned to the companies by which he was employed. The Lundquist establishment is prepared to do all manner of experimental and development work and model building, as well as the manufacturing of dies, tools, etc., required by patrons.

OSCAR ONSRUD MACHINE WORKS

The manufactory and offices of this well ordered industrial concern are established at 4646-50 West Iowa street, and the functions of the company include those of machinists and engineers and the manufacturing of the highest grade of high-speed pneumatic drills, grinders and turbine-motors, automobile parts, friction clutches, tools, jigs, fixtures, special machinery and other products of similar order. The business was founded in 1915, by Oscar Onsrud, and his primary object in taking this action was to manufacture a greatly improved type of high-speed pneumatic tools of his own invention. These tools are now

manufactured on an extensive scale, have met with the unqualified approval of the trade and are used as a part of the standard equipment of a great variety of factories, machine shops, garages, etc., throughout the United States. The Onsrud high-speed internal grinder, with pneumatic motor of the double two-stage turbine type, likewise has been received as the acme of superiority in this line of mechanism, and it is being manufactured in all sizes and all powers.

Mr. Onsrud received his first patents in 1907, and within the intervening decade has had about eighteen additional patents granted by the United States patent office. His factory, all departments of which are under his exacting and able supervision, is operating successfuly in the manufacturing of the drills and grinders invented by him, and also turbines and other high-grade mechanical devices. The company also controls a substantial business in the designing and building of special machinery for manufacturers, and conspicuous among recent achievements in this department has been the production of special machines for the manufacturing of asbestos shingles, for the making of wire cloth and machinery for the manufacturing of tin cans. The concern finds constant requisition for its efficient service in the contract manufacturing of small tools, fixture, and machine parts, and many representative Chicago manufacturing establishments depend upon this company for the supplying of their needs in these lines of shop equipment. It is needless to say that the Onsrud plant is most modern in its mechanical equipment and facilities, or that a staff of skilled mechanics is retained in the various productive departments of the enterprise. In the factory management Mr. Onsrud is assisted by his son, Rudolph F., who was born and reared in Chicago and who was here graduated in the Crane Technical High School in February, 1918. After acquiring practical experience in his father's establishment this ambitious young man will complete a full collegiate engineerng course.

OSCAR ONSRUD

Oscar Onsrud, founder and executive head of the Oscar Onsrud Machine Works, was born in the city of Christiania, Norway, in the year 1867, and in his native city he received excellent educational advantages, after which he there served a most thorough apprenticeship to the trade of machinist, besides further fortifying himself by attending the night sessions of trade schools and by well directed private study and research along technical lines. Thus he became a skilled draftsman and machinist, and finally his ambition and determined purpose prompted him to leave his native Northland and to come to the United States, where he felt assured of better opportunities for advancement. He came to this country in the year 1892 and almost immediately after his arrival in the port of New York city he set forth for Chicago, where his ability forthwith enabled him to effect a congenial and advantageous connection with the extensive and representative manufacturing corporation of Allis-Chalmers Company. With this concern he took the position of traveling engineer, with functions of assembling and installing machinery manufactured by the company. Of this exacting and responsible post he continued the valued and efficient incum-

bent for a period of nine years, within which interval he had charge of some of the largest installations of factory equipments manufactured by the company. In later years of his service as a traveling representative of this important Chicago corporation Mr. Onsrud gave his principal attention to outlining and defining prospective requirements of concerns preparing for factory equipment, and he thereafter supervised the laying out and equipping of the plants in which Allis-Chalmers machinery was installed.

After his marriage Mr. Onsrud showed his appreciation of the charms of domestic life by retiring from the position of traveling representative and taking the position of shop foreman in the manufacturing plant of the Allis-Chalmers Company. Finally he was advanced to the important post of superintendent of the entire manufactory, and of this position he continued in tenure until the plant was removed from Chicago to Wisconsin. Much as he appreciated his long and pleasing association with this corporation, Mr. Onsrud preferred to continue his residence in Chicago, and thus he resigned his position, though urged to continue his alliance, and after twenty-one years of continuous association with the Allis-Chalmers Company, the largest concern of the kind in the United States, he severed the mutually pleasing relations and engaged in the manufacturing of the pneumatic tools and motors invented by him, the record of his business career since that time being adequately outlined in the preceding context. He has gained a secure place as a factor in the industrial activities of the western metropolis, and the success of his business has been furthered by his wide acquaintanceship with the trade and by his personal popularity.

RAFFEL MANUFACTURING COMPANY

The industrial enterprise conducted by this company, with a well equipped plant at 4441-7 Armitage avenue, was founded in 1898, by Ferdinand T. Raffel, who established a modest but well ordered factory at the corner of Holt and Fry streets, where he engaged in the manufacturing of bicycles and bicycle accessories. He developed a very prosperous enterprise and after the decadence of the popularity of the bicycle he gradually evolved the manufacturing of other products, and the enterprise has had a consecutive history of growth and expansion. The company has a large and well ordered plant devoted to the manufacturing of tools, dies, hardware specialties and patented articles, besides giving attention to experimental and development work along mechanical lines and to the manufacturing of special machinery. The concern does a large amount of contract work in metal stamping and in the manufacturing of screw-machine products. Another important department of the industry is that given to the designing and building of automatic machinery and high-grade machine parts, to the producing of patterns and models and the manufacturing of all manner of patented articles of mechanical type. The company specializes in screw-machine products up to two and three-sixteenths inches in diameter; punch-press and deep drawing; special wire shapes, coiled springs, jigs, dies, etc., besides having a well equipped department devoted to electric welding and to enameling and mechanical plating of metals. The company has on its list of

patrons many representative industrial concerns in Chicago, and in this field it has held for years contracts for special work in its line, particularly in the production of deep-drawing electrical equipment, bushings and pins for chains, screwdrivers, socket wrenches, spring adjusters and other electric linemen's tools; metal stamping work for the assembling of alcohol and spirit lamps for scientific laboratory use; and a greatly diversified line of similar products. Important contract work of this order has been done for such concerns as the Kellogg Switchboard Company, Skillen & Richards, Reedy Elevator Company, Vaughn & Bushnell, the Federal Steel Fixture Company and many other representative corporations and firms.

The Raffel Manufacturing Company removed to its present plant in 1912, and the factory, at the corner of Kenneth and Armitage avenues, is a model industrial establishment of the best mechanical equipment and general productive facilities. The substantial business is conducted as a copartnership organization existing between Ferdinand T. Raffel, the founder of the enterprise, and his two sons, Edward C. and H. C., the sons having active charge of the general offices and the factory production.

FERDINAND T. RAFFEL

Ferdinand T. Raffel is consistently to be designated as one of the veteran captains of industry in Chicago, in which city he has maintained his residence since March 7, 1872. During the long intervening years he has been continuously identified with the metal-working industry, his first alliance after his arrival in Chicago having been formed when he took the position of machine designer for the E. P. Peacock Company, builders of special machinery. With this company he remained nine years, and he then engaged in business of independent order, under the title of the Western Toy Company. This enterprise involved the manufacturing of toys, bicycles, baby carriages, etc., and eventually it was developed into the Western Wheel Works, with factory at the corner of Wells and Schiller streets. The business was here successfully continued until it was consolidated with that of the Pope Manufacturing Company. With the latter corporation Mr. Raffel remained as general superintendent and he was actively associated with the manufacturing of bicycles for twenty-three years, at the expiration of which he founded the substantial industry conducted under the title of the Raffel Manufacturing Company, of which he is still the executive head.

Mr. Raffel has been a man of great productive industry, has contributed his quota to the material advancement of Chicago, has a wide acquaintanceship among the city's representative manufacturers and other business men, and his genial personality and sterling characteristics have gained and retained to him a circle of friends that is limited only by that of his acquaintances. He is one of the successful and progressive business men and loyal and public-spirited citizens of Chicago. His two sons have gained thorough experience in the field of manufacturing in which they are successfully directing their activities, and both are known as vigorous and resourceful business men of their native city.

RAFFEL & GREINER

The drop-forge and die works conducted by Raffel & Greiner in the modern industrial plant of the company is finely equipped with the most modern type of punch and stamping presses, including a hydraulic press of two hundred tons' pressure from the bottom to one hundred tons' pressure at the top, a complete battery of drills, boring and internal-grinding machines, spot welders and silver soldering and bronzing appliances of the best type.

At the time of this writing, in the spring of 1918, it may be said that for more than eighteen months William F. Raffel has had the facilities of his manufacturing plant tested to the utmost, with operations carried on during twenty-four hours each day. This great activity has been caused primarily through the fulfilling of certain government orders for the United States arsenal at Rock Island, Illinois, and the Raffel factory in this connection has been producing the very highest grade of gun bearings and other mechanical steel parts requiring most accurate work, the efficiency of the service given being significantly vouched for in the fact that not a single piece of work from the Raffel factory has been rejected and not even a minor complaint or criticism been made.

Mr. Raffel is further contributing his quota to the furtherance of the military activities of the nation by his assumption of two large and important subcontracts in making tools for manufacturing delicate parts for surgical instruments to be used by military surgeons in connection with the great world war. Apprised of the demand on the part of manufacturing jewelers, saw blades for silversmiths to platinum work, now that the imported articles of this type are not to be had in the United States, Mr. Raffel devoted considerable time to experimentation and research in order to obtain the proper temper for such saws, and then designed special machinery for the manufacturing. In his factory he now has a special department devoted to the manufacturing of these fine saws of six different sizes, and in practical test these have been found equal, if not, indeed superior, to the imported articles formerly used in America. He has reason for much gratification in that he has thus brought to Chicago a new industry of importance and also in that his products in this line have met with enthusiastic reception on the part of manufacturers throughout the Union.

ENTERPRISE PATTERN WORKS

The manufacturing plant of the Enterprise Pattern Works, at 15330-32 Park avenue, Harvey, Illinois, is one of the best equipped establishments of the kind in the metropolitan industrial district of Chicago, and the large and prosperous business has involved in its development the support and continuous patronage of a large number of the important manufacturing concerns of Chicago and its environs. The business of this company was founded in 1911, under copartnership relations formed between R. C. Schrieber and F. J. Piesner. With the substantial expansion of the business, the original productive plant has been trebled in size and equipment, and under the able and vigorous control of the founders the enterprise continues to show a notably cumulative trend. The

building occupied was erected specially for the purpose to which it is applied, and is fifty by ninety feet in dimensions, one story in height. The plant is equipped with the best of machinery, tools and general accessories, and a number of the valuable appliances utilized were designed specially by the company. A staff of highly skilled patternmakers is retained in the manufacturing of wood patterns of every description, and from the establishment have gone forth the finest type of patterns and models for the production of machinery and other devices used in many important industrial institutions in the Chicago district. On the list of clients of the Enterprise Pattern Works may be found the names of the Buda Company, of Harvey, manufactures of the celebrated Buda motors and railway switches; the Ingalls-Shepard Company, of West Harvey, operating a large drop-forge foundry and also manufacturing high-grade automobile parts; the American Manganese Steel Company, Chicago Heights; General Combustion Company, Chicago, and many other concerns of relatively equal importance.

All details of factory production in the plant of the Enterprise Pattern Works are under the direct supervision of Messrs. Schrieber and Piesner, and they have developed their substantial business through efficiency of service, through progressive policies and through that definite reliability that is essential in all departments of industrial and commercial enterprise. Both of the principals in this vital business concern are men of broad technical experience in connection with patternmaking, and their advancement and success have been worthily achieved.

THE ROCKWOOD SPRINKLER COMPANY

This corporation represents one of the specially important manufacturing industries of Chicago, for the products issued from its factory have definite pertinence in safeguarding from fire buildings used for all manner of manufacturing and commercial purposes. The automatic sprinkling system that figures as the basis of the large and prosperous business controlled by this company has been installed in many of the largest and most important buildings in Chicago, and its efficiency has brought it into requisition in leading industrial and metropolitan centers throughout the United States, as well as in Mexico and the Canadian provinces. The company has patents on the sprinkling device and on valves and other appurtenances incidental to the system, the annual sales now having attained to an average aggregate of about one million two hundred thousand dollars and the concern being one of the most important of its kind in the Union. The well equipped assembling plant of the Rockwell Sprinkler Company is eligibly situated on South Morgan street, in the Central Manufacturing district, and the general executive offices are on the eleventh floor of the Corn Exchange National Bank building. The factory office is at 3610 South Morgan street.

The Rockwell Sprinkler Company was organized in 1909 and is incorporated with a capital stock of one hundred and fifty thousand dollars, the personnel of the executive corps being as here noted: George I. Rockwood, president; J. P. Ashley, vice-president; Warren M. Salisbury, treasurer; and R. S. Ripple, secre-

tary and general manager. Both the president and vice-president are residents of the city of Worchester, Massachusetts. At the Chicago assembling plant employment is given to about two hundred and fifty persons, and the company maintains ten branch offices, so disseminated as to facilitate the handling of the business in the various sections of the United States, the Chicago plant having the unexcelled transportation facilitites afforded by the Chicago Junction Railway, which has had an important influence in the development of the vigorous Central Manufacturing District.

R. S. RIPPLE

The secretary of the Rockwood Sprinkler Company, which is described in preceding paragraphs, has charge of the business in Chicago and has wielded large influence in the upbuilding of the extensive enterprise with which he is thus identified. He was born in Sioux City, Iowa, on the 7th of September, 1878, and is indebted to the schools of his native city for his early educational discipline. As a young man he became business manager of the Sioux City Tribune, a position of which he continued the incumbent four years. In 1902 he came to Chicago and became associated with his brother Warren in the manufacture of electrical specialties. They utilized the plant of the George Cutter Company, which was organized by Mr. Ripple, and in 1913 the headquarters of the business were removed to South Bend, Indiana, where Mr. Ripple and his brother are still associated in the control of the well established business. They give employment to a number of skilled mechanics and men of marked inventive genius, and through the latter, control patents on a number of valuable devices and specialties utilized in connection with various phases of applied electricity.

Mr. Ripple has been associated with the Rockwood Sprinkler Company since 1909 and is one of its stockholders. This company is the virtual successor of the Automatic Construction Company, the change of title having been made at the time of the reorganization of the business. He is a member of the City Club and the South Shore Country Club, and finds periodical and restful recreation through the medium of hunting and fishing trips. Residence, 2244 Lincoln Park West.

IDEAL SPINNING COMPANY

The substantial industrial enterprise conducted by this vigorous Chicago corporation was founded in 1903, by Arthur E. and O. J. Bond, who still command the destinies of the company and who have so ordered its course as to make the enterprise one of the most important of its kind in the west. This noteworthy result has been due essentially to the inventive and mechanical talent and executive ability of the Messrs. Bond and their valued coadjutor, H. Simonsen, who is superintendent of the factory in the matter of devising special machinery and bringing about maximum economy of production.

The Ideal Spinning Company is engaged in the contract manufacturing busi-

ness, and its goods are handled, under the provisions of special contracts, by some of the leading manufacturers of Chicago and the middle west. The output of the factory includes metal trimmings for fine passenger coaches on railroads, including Pullmans, locomotive headlights, surgical and dental instruments and other products of similar order but of widely diversified types, for use in connection with electrical, chemical and other forms of industry. The company holds a contract with the United States government war department for the manufacture of steel kitchen-boilers and cookers of special design, the same being made of heavy pressed steel. In this connection the Ideal Spinning Company has created absolutely new industrial ideals in its patriotic endeavors to fulfill this important war contract, and incidentally new manufacturing methods and processes have been adopted. Thus it is that by special process of cold-steel stamping and pressing the government is assured of products that are scientifically and mechanically perfect in construction. The boilers and cookers manufactured by this company for war service are so made as to insure sanitary conditions in the field cooking at the stage of active military operations, seams and other crevices being avoided by the shaping of solid sheets of steel. In the conscientious and loyal fulfilling of this important contract the company has devised and placed in commission special machines of various types, and duplicates of these effective devices are to be found in no other factory. In connection with this government contract the company has already delivered twenty-five hundred of the boilers and cookers in France, and that fully fifty per cent. ahead of the stipulated schedule of production and delivery. Such expedition of service is one worthy of emulation in other fields of war preparation.

Without infringing on the technical secrets of manufacturing methods employed by this company, it may be said that it has achieved remarkable results through the use of specially designed cutting shanks on circular cutting machines of slow power and by the insulated spinning of one cover plate over the other with intermediate strata of composition for the retaining of heat, the result being that when the cooker cover is completed it appears to be and virtually is a solid piece. The company is at the time of this writing working out some interesting experiments in line with suggestions which it has made to the war department and which have met with approval on the part of the department, which has authorized the carrying out of the suggestions.

The Ideal Spinning Company is a partnership organization and its first factory was established at 33-35 West Washington street. The substantial expansion of the business soon made it imperative to obtain larger quarters, and removal was made to 557 West Jackson boulevard, where operations were continued six years. Increased demands led at this juncture to the securing of larger factory accommodations, at 222 South Canal street, and in 1915 the company took possession of its present productive plant, which gives eleven thousand square feet of floor space and is situated at 355 Union Park Court, its mechanical equipment and general facilities being of the best modern order.

O. J. Bond, the elder of the two brothers associated in the upbuilding of this noteworthy industrial enterprise, was born and reared in Chicago and after leaving school he identified himself with the metal industry, as an employe in the factory of the Turner Brass Works, where he gained experience in all de-

tails of the factory work and where he continued as a valued employe until he became associated with his brother in establishing the Ideal Spinning Company.

Arthur E. Bond likewise was born and reared in Chicago and was afforded the advantages of the public schools of his native city. As a youth he found employment in the extensive manufacturing plant of Lyon & Healy, and here he acquired thorough knowledge of manufacturing metal parts used in the assembling of musical instruments, his association with this representative Chicago concern continuing until he resigned his position to become one of the founders of the Ideal Spinning Company, of which he has since been general manager.

AMERICAN MACHINE AND TOOL COMPANY

The industrial plant of this progressive Chicago concern may consistently be designated as one of the finest establishments of the kind in the United States, and this precedence applies not only to the equipment and efficiency of the plant but also denotes the interested principals in the enterprise to be men of energy, enterprise and executive ability. Efficiency of service and effective administrative policies have brought about a substantial development of the business within the comparatively short period since the same was founded. The American Machine and Tool Company was organized in 1917 and duly incorporated under the laws of Illinois, the capital stock being placed at twenty-five thousand dollars and the entire amount being paid in. The money now actively invested in the enterprise is much in excess of the stipulated capital stock. Those concerned in the organization and incorporation of the company were Ernest A. Eklund, Carl O. Swenson, and Joseph R. Richer.

The American Machine and Tool Company was organized for the purpose of manufacturing various types of cutters, hobs and machinery on which the company owns patents. The productive plant, at 1438 Bryan Place, is now running night and day (spring of 1918), and in the establishment is retained a force of one hundred skilled mechanics. The output of the factory at the present period is chiefly fine mechanical steel parts for use in connection with the nation's participation in the great European war, and the work thus issued is one involving intricacy and precision. The officers of the company and also the workmen take pride in being thus able to assist in the country's preparatory war activities and also in the fact that not one product from the shops of the company has been rejected when official government inspection was made. The company has made a substantial investment in bringing the mechanical equipment and facilities of its plant up to the highest modern standard, and the establishment occupies an entire floor of the Savage building, at the corner of Bryan Place and Randolph street.

Carl O. Swenson, vice-president of the company and also one of its organizers, had previously held the position of designer in the factory of the Goddard Tool Company, and he is recognized as an expert and authority in the making of special tools, dies, etc., his technical skill and executive ability having resulted in his being called upon to fill important and responsible positions with various representative manufacturing concerns, including the Illinois Tool Company

and the Western Electric Company, he having been actively identified with tool-making since his early youth. He was born in Sweden. He is a vigorous and industrious business man and is making a place for himself in the industrial life of the western metropolis. He is affiliated with various fraternal and social organizations in Chicago and is a loyal and appreciative citizen.

Joseph R. Richer, who is a director and active executive of the American Machine and Tool Company, holds the position of chief engineer for the factory, and prior to identifying himself with the present concern he had held the position of chief designer with the Illinois Tool Company. He is an expert in his exacting field of service and he claims Sweden as the place of his nativity. He has been a resident of Chicago for many years.

Ernest A. Eklund, secretary and treasurer of the American Machine and Tool Company, is the manager of the company, and he is making a distinct success in the industrial domain, though he is a lawyer by profession. Mr. Eklund was born at Worcester, Mass. He engaged in the practice of his profession in Chicago and continued as one of the successful practicing lawyers of the younger generation in the city until he effected the organization of the American Machine and Tool Company, his entire time and attention being now demanded in the directing of the affairs of the company, as he has active management in both financial and executive capacities. In promoting the organization and development of the company he enlisted substantial capitalistic co-operation, so that full provision is made for the continuous growth and expansion of the well ordered industrial enterprise.

MECHANICAL MACHINE & TOOL WORKS

The admirably organized and well conducted industrial enterprise of this progressive company has definite precedence in its special field of operations and the excellent productive plant of the company is established at 549 Fulton street, Frederick C. Jewell being president of the corporation and Henry S. Jewell its secretary and treasurer. Under copartnership relations the business was founded in 1910, and the original factory was located at 115-17 South Clinton street. The substantial expansion of the business soon necessitated the securing of larger quarters, and removal was made to the building at the corner of Harrison and Clinton streets. There operations were continued until October, 1916, when further expansion of factory facilities was provided for by a removal of the plant to its present quarters. The company was incorporated in 1911, and the active management of the prosperous enterprise is vested in Henry S. Jewell, the secretary and treasurer. The company does a general jobbing and contracting business in all lines of metal manufacturing in its assigned province, besides which special attention is given to the manufacturing of certain high-grade devices patented and owned by the company. This vigorous corporation has handled a large amount of special work of major importance, in the production of metal stamping and other types of metal devices for industrial purposes.

In its individual field of manufacturing the company gives special attention

to the production of the Jewell patented glass-jar wrenches, the invention of Henry S. Jewell, and to the manufacturing of a die-grinding emery wheel, likewise invented and patented by Mr. Jewell. The company also manufactures upon a constantly expanding scale the remarkable device known as the "Universal" wrench—"the wrench of a thousand sizes, that fits all nuts. The 'Universal' wrench is a nut wrench, a pipe wrench, all in one. It never fails to clinch, and the harder you pull the tighter it grips." This remarkable wrench was patented by the secretary and treasurer of the company, and another important output is the Jewell combination,—a trammel or compass,—of which description is given adequately in pamphlets and bulletins issued by the concern.

The factory of the Mechanical Machine & Tool Works utilizes two floors of the building at 549 Fulton street, with an aggregate area of eleven thousand square feet, and from the foregoing statements it may well be understood that the mechanical equipment of the plant is of the best modern type in all departments. A force of skilled mechanics is constantly employed, the minimum number being twenty-five, and the company is prepared to make concise detailed estimates for the manufacturing and designing of all products in this line.

Henry S. Jewell has been actively associated with the metal trades during his entire business career, and is a man of marked mechanical ability, inventive genius and broad experience. For a number of years he was a traveling salesman for tool and machine-steel products, and his broad acquaintanceship with the trade has inured greatly to the success of the company of which he is now secretary and treasurer.

Prior to the establishment of their present industrial alliance, both of the Messrs. Jewell had acquired broad practical experience by holding various positions of trust and responsibility with many of the representative industrial organizations throughout the United States.

ALFRED O. BLAICH COMPANY

A manufacturing industry that is distinctly unique in character and that is one of no minor importance is that conducted by the Alfred O. Blaich Company, the well equipped factory of which, at Clybourn and Clifton Avenues and Marcey Street, being owned individually by Mr. Blaich, President and Treasurer of the Company, and having been erected at an approximate cost of Fifty Thousand Dollars. This plant was erected during 1912 on a site 110 ft. x 124 ft. dimensions, it comprises two modern industrial buildings of one and two stories with basements and affording an aggregate floor space of 31,000 sq. ft., the institution having direct switch track connections with the C. M. & St. P. Ry., so that excellent transportation facilities are controlled. The Company conducts a substantial and important enterprise in the manufacture of Case Hardening Materials, the most important of which is the "Blaich Modern Carbonizer," representing an invention of the President of the Company.

Mr. Blaich was successful in discovering a process for the effective charring of leather to be applied in Case Hardening, and this is undoubtedly the only

concern in the United States today that manufactures this valuable product, the same being used for Case Hardening and also for Mottling purposes, and various other types of Case Hardening Compounds likewise being manufactured by the Company. The output is sold principally to the representative manufacturers of automobiles and trucks and the sales of the Company for the year 1917 exceeded $200,000.00.

ALFRED O. BLAICH

On its processes and formulas the Company has several patents. The factory employs an average force of twenty-five employes and the officers of the Company are here noted: Alfred O. Blaich, President and Treasurer; James A. Howland, Vice President and Frederick Pugh, Secretary.

The business now conducted under the title of Alfred O. Blaich Co. had its inception in January, 1908, when Mr. Blaich established an experimental station for the charring of Scrap Leather. He continued his varied experiments until he had perfected that process and the first definite manufacturing plant for the output of the product was established the following year at 934-36 Pratt St., now West Huron Street. Their operations were continued until the erection of the present modern plant, to which removal was made in 1912, the office address of the plant being 1954-64 Clybourn Avenue.

Mr. Blaich continued the enterprise in virtually an individual way until March, 1915, when he effected the organization of the present Company, the same being incorporated under the laws of Illinois, with a paid in capital stock of $30,000.00, at the close of the year 1916 had a surplus fund in excess of $20,000.00, representing the earnings in addition to dividends paid to the stockholders.

AMALGAMATED MACHINERY CORPORATION

Incidental to America's having become involved in the great world war there is one Chicago corporation whose functions are of major importance, and in connection with its inception and its importance in connection with polemic

PLANT OF ALFRED O. BLAICH

activities the following extracts from an article that was written by Ethan Viall and originally published in the American Machinist of May 11, 1916, are specially worthy of reproduction and perpetuation in this volume. Preceding the general context of the article by Mr. Viall is given the following brief synopsis:

"The building and machine-construction methods outlined in this article constitute an unusually remarkable series of engineering achievements. The machines were made to produce shells and the plant to produce machines. A notable feature is that the building is long and narrow, the work moving across it and not lengthwise, as usual. The machines are so designed as to eliminate all the machine work possible, there being absolutely none on the main-frame casting. The comparatively few machined parts are made in quantities, all interchangeable, and then assembled with a speed that is almost incredible." Mr. Viall's article bears this significant title: "Building single-purpose lathes in a single-purpose shop," and for the purposes of the work at hand it is necessary to quote but briefly:

"The first great demand for shell machinery and tools was for the smaller sizes. Established makers eliminated the manufacture of all machines except those which were in immediate demand and could be most easily produced. Special or single-purpose machines were designed as rapidly as possible or were improvised by leaving off the non-essentials from regular models. The average shop, however, was not fitted to produce machinery capable of machining the larger sizes of shells. Probably less than a half-dozen shops in this country had sufficient room and production machines for large work. As a consequence practically everyone concerned concentrated on machines for producing shells under 4.5 inches. The demand for larger shells steadily increased, but proper machinery could not be obtained. This condition led to the formation of the Amalgamated Machinery Corporation, of Chicago.

"Ignoring the overcrowded small-shell field, its efforts were directed entirely to the construction of machines for making the largest sizes of shrapnel and high-explosive shells. Shells demand accuracy. The demand for large shells was urgent. It naturally follows that machines to do the work required must be made right and be made quickly. That these conditions were successfully met will be apparent from this article. It must be remembered, however, that market conditions were extraordinary. Otherwise, it is extremely doubtful whether anything so radically different from existing types would have been given anything like a fair trial. The fact that shell-making plants having huge batteries of these machines are constantly re-ordering more is proof enough of their accuracy, durability and success for the purpose for which they were designed."

It is not within the province of this publication to attempt detailed description of the machines produced by the Amalgamated Machinery Company or of the process of their manufacture, but quotations from the Viall article may be consistently continued in minor degree, as follows:

"One of the very unusual guaranties of the company is to finish five per cent. of any order per day, no matter how large the order. It follows that some unusual production methods must be followed, aside from the assembling of the machines. The shop is divided into units, each practically complete in it-

self, for the assembling of a single machine at a time. Four men constitute an assembling gang. The record for assembling a No. 21 machine is about seven and one-half hours complete. A fair average seems to be nine hours. The size and number of castings required to supply the assembling shop when running on a large order precludes any one foundry from doing all the work or any one set of patterns from sufficing. For this reason a large number of duplicate patterns were made, requiring the work of over one hundred men for two months. The production of two hundred tons of machine tools daily means rapid handling all along the line, and in the assembly shop the work is of an extent that would be impossible unless everything had been built special. The assembly building, known as the south shop, is forty-four by three hundred feet. A railroad track runs close to each side, so that castings are unloaded at a door on one side, take a diagonal course almost directly across, emerge completely assembled and are loaded on a car on the other side. Two five-ton cranes are available to serve each machine, if necessary. Then of these cranes, each worked by two motors and capable of revolving around its columns are placed down the length of the shop. The only columns in the building are the crane columns. The astonishing thing is that this entire building, with its fittings, was completed in eighteen days from the laying of the foundation. The preliminary preparations for the manufacturing operations included an enormous number of details. Nothing, however small, that would assist the speed and accuracy desired was overlooked. The Amalgamated owns and has in its actual possession what is probably the largest stock of steel of its special sizes in the country. No cold-rolled stock whatever is used, as it has an end grain as well as a surface tension rendering it unfit for the Amalgamated's purpose. Only open-hearth, fifty-carbon steel, turned and ground to extreme limits, is employed. All other parts, such as gears, collars and the like, are made by specialists who are held to rigid inspection limits."

It may further be said that this special form of construction was invented and patented by the Amalgamated Machinery Corporation. The factory of the company is located at Thirty-seventh street and South Racine avenue, where operations were instituted in 1915. In the early part of 1916 were here completed two buildings of one story, each fifty by three hundred and fifty feet in dimensions. The company is incorporated under the laws of the state of New Jersey and its officers are as here noted: T. K. Webster, president; L. I. Yeoman, vice-president; Walter A. Strong, secretary and G. B. Moderwell, treasurer. The corporation gives attention exclusively to the manufacturing of shell and gun machinery, and ordnance machinery, in the filling of war contracts. The company controls all patents and inventions pertinent to its manufactured products, and upon its inventions has been given a medal by the Franklin Institute, of Philadelphia. At the factory employment is given to a force of about two hundred and fifty men and no other industrial plant in Chicago has its work and provisions so thoroughly organized and systematized. High fence of barbed wire encloses the entire plant, the grounds are brightly illuminated with electricity at night and an effective patrol is maintained night and day, so that no person can enter without proper credentials. This is one of the most complete manufactories in the country and from the same is being issued a large amount of valuable war machinery.

SMITH MOTOR TRUCK CORPORATION

From an idea in the mind of one man to dominance in the markets of the world within the short space of two years is the story of the Smith Form-a-Truck—a business development which rivals the magic of Aladdin's lamp.

A business which began on a borrowed capital of $1,500.00 and which grew to a $14,000,000.00 concern through the genius for organization of one man and by means of the power of printer's ink, and all in a time too short for hundreds of other institutions to get started—this is a story which challenges comparison.

The development of a product which has broken the shackles of a costly, slow and inefficient service in the hauling and delivery of a world and has substituted an economical, speedy and efficient method is the record which the Smith Form-a-Truck has made.

The keenness of vision which foresaw the possibilities—the courage which could see nothing in obstacles but a stimulus to endeavor—the genius to command capital, control men, organize productive facilities of great magnitude and capacity—the ability to devise methods of marketing which speedily dominated a market—all these contributed to the success of the Smith Form-a-Truck.

Today over 40,000 business men, scattered wherever there is civilization and business organization throughout a world, are making daily use of the Smith Form-a-Truck to solve their delivery problem and to provide the lowest hauling cost in the world.

Today in the enormous factory which this single industry demands the wheels are humming on the production of a greater number of hauling units for distribution during the current year than will be turned out by any other concern in the motor truck industry—no less than 36,000 for the year.

This is because the idea which came to Chicago such a short time ago in the mind of one man meets a need which is universal.

This is because in the hands of a capable genius this idea was so popularized that a whole world has heard of it.

This is because it was not only a pregnant idea, but it was an idea of merit developed in a way which demanded confidence. A splendid idea was bodied forth in an article of quality and merit. It grew in strength and influence because it was right.

This is because the Smith Form-a-Truck has commanded the ability of distributors and dealers everywhere—over 2500 of them—who are loyal to the company and to its product and to whom the company lends of its ability in a co-operative way.

This is because the Smith Form-a-Truck has made good under all sorts of conditions and in all kinds of circumstances and invariably has given satisfaction.

This is because the Smith Form-a-Truck has taken a source of power which in its original form was limited in its application and has converted it into a mighty engine for the economical conduct of business.

And what the Smith Form-a-Truck has accomplished in the past in this direction is just a promise of what it will accomplish in the future. It is destined to do even more magnificent things.

Emancipated now from the limitations of a single power unit of a specific kind it is spreading out and conquering new power fields.

It is taking on a new function—in addition to solving the delivery problem and providing the lowest hauling cost in the world it now is solving also the problem of the used car for the whole automobile industry.

This record of achievement has been phenomenal—in the magical story of the development of the motorized vehicle no chapter is more wonderful and fascinating than that which tells of the Smith Form-a-Truck—what it was—what it is—what it is going to be.

The officers are: D. W. Figgis, president; B. E. Veatch, vice-president; R. I. Eads, vice-president; C. R. Hammer, treasurer; L. A. Stebbins, secretary and general counsel.

The company was incorporated at Richmond, Va., on November 27th, 1916. The factory site at Clearing was purchased January 25th, 1917. There is a one-story brick building, with ground area of approximately 60,000 square feet, and another brick building, 270 feet long by 162 feet wide, of which building 160 feet x 162 feet is one-story and 110 feet x 137 feet two-stories in height.

The most prominent commercial organizations of which the company is a member are: Chicago Association of Commerce; Chicago Automobile Association; Illinois Manufacturers' Association.

GENERAL FIRE EXTINGUISHER COMPANY

This important corporation, manufacturers of the Grinnell automatic sprinklers, holds precedence as being the largest concern of the kind in the world and its business is disseminated through all parts of the United States and Canada, besides being extended into many foreign lands, especially in leading industrial centers where there is imperative need of such splendid fire-protection equipment as is produced and installed by this company. It is but natural that the corporation should have established in Chicago the headquarters of its western department.

The General Fire Extinguisher Company opened its first Chicago offices in the city's first skyscraper building, the Montauk block, 115 Monroe street, this action having been taken in September, 1882, when A. F. Nagle was transferred by the company from Cincinnati to assume charge of the new general western offices thus opened in Chicago, from which point has since continued to be controlled a very large volume of the gigantic business of the company, which was then known as the Providence Steam & Gas Pipe Company. Mr. Nagle remained as general agent in Chicago for six years and was succeeded by B. W. Dawley, an able and progressive business man who retained this incumbency until his death, in 1911. At this juncture the Chicago offices were separated into two distinct departments,—the Chicago department and the Northwestern department. A. J. Neraher succeeded Mr. Dawley in the office of department agent, but his regime was of brief duration, as his death occurred in the following year,—on the 12th of June, 1912. In 1911 J. G. Thomas became the head of the newly established northwestern department, and of this position

he has since continued the valued incumbent. Theodore Fertig succeeded Mr. Neracher as department agent for the Chicago department and his effective administration has continued to the present time.

Further consideration of the importance of Chicago as a commercial and industrial center has been given by the General Fire Extinguisher Company, as demonstrated by the action taken in the erection and equipping of a manufacturing and distributing plant of large capacity in this city, the fine plant having been completed and placed in commission in May, 1916, and employment being here given to a force of one hundred and fifty men. In this well ordered establishment is carried in stock a full line of all products manufactured in the large eastern factories of the company, and the institution is eligibly located at 1138 West Thirty-eighth street, in the celebrated Chicago industrial section known as the Central Manufacturing District. Here is utilized an acre of ground and the building erected by the company is of the best modern type. The business offices of the company in Chicago are established on the tenth floor of the Continental & Commercial Bank Building, where spacious quarters have been occupied since July, 1916. From the original location in the Montauk block removal was made to the Pullman building, at the corner of Michigan boulevard and Adams street, and later removal was made in turn to the Royal Insurance building and the Woman's Temple, from which last mentioned the offices were transferred to the present location.

A review of this necessarily circumscribed order can not, as a matter of course, enter into details concerning the development and upbuilding of the important industrial enterprise represented in the operations of the General Fire Extinguisher Company, but a few quotations from an attractive brochure issued by the company may consistently be given place, with minor paraphrase and elimination, in this article:

"The Grinnell automatic-sprinkler head, invented by Frederick Grinnell in 1881, supplanted the only previous device that had been at all practical. The superseded head was invented by Henry S. Parmalee, of New Haven, Connecticut, in 1874. Up to 1878 only a few thousand had been installed. Then the Providence Steam & Gas Pipe Company, of which Frederick Grinnell was president, took up the manufacture and installation of the Parmalee head. In an effort to make the device more effective and less costly to produce, Mr. Grinnell had it redesigned. He then began the long work of educating business men and insurance companies to the efficiency of sprinkler protection. As this work went on Mr. Grinnell came to see the defects in the Parmalee head. Day after day he made tests and investigations. Finally, in 1881, he patented a device that operated twice as quickly as the Parmalee head and effectually overcame the tendency to leak which had been a serious drawback in the Parmalee head. Moreover, he was able to manufacture it economically. The fundamental features of this early Grinnell head have been the basis on which all subsequent devices have been made. This head has a flexible diaphragm which assured absolute tightness of joint and a proper spring to the operating parts. The diaphragm is still one of the characteristic features of the present Grinnell Automatic Sprinkler. The absolute simplicity of this device has in a measure blinded the public to the real greatness of the invention made by Frederick Grinnell. Engineers and fire-insurance experts know that the very simplicity

of an automatic sprinkler makes it successful, and they realize further that although it is simple it is none the less one of the greatest of modern inventions,—an invention which has done much to render possible the development of the greatest industries."

The General Fire Extinguisher Company was organized in 1892, and concerning it the following pertinent statements have been made in a publication issued by the company: "No company ever started business with a more sound heritage,—the heritage of a product of great economic importance. Because of our superior product and the years of experience gained by our men working under Mr. Grinnell, the General Fire Extinguisher Company, under the presidency of F. H. Maynard, who was Mr. Grinnell's chief lieutenant in the development of the business, has kept its place as the largest sprinkling concern in the world. To-day the records show Grinnell Automatic Sprinklers to be more than ninety-nine per cent. efficient."

It is sufficient for the purposes of this succinct review to state that the executive offices of the General Fire Extinguisher Company are established in New York city, and that the business in general is handled through departments designated as the eastern, the western, the southern and the Canadian. Plants and warehouses are located at Providence and Auburn, Rhode Island; Warren, Ohio; Montreal, Canada; Charlotte, North Carolina, and Atlanta, Georgia; New Orleans, Louisiana; Philadelphia, Pennsylvania; and Chicago, Illinois. The personnel of the company's official corps is as here noted: F. H. Maynard, president; Russell Grinnell, vice-president and general manager; W. A. Neracher, second vice-president; L. W. Jones, treasurer; H. B. Cross, secretary.

BUSH & GERTS PIANO COMPANY

One of the oldest and most important piano-manufacturing concerns in the west is the Bush & Gerts Piano Company, and its extensive business has had marked influence in furthering the prestige of the western metropolis as a manufacturing and distributing center. There are many points of special interest in connection with the history of this company, not only by reason of its controlling a large and representative industrial enterprise but also on account of the prominence and influence of those who have been concerned with the enterprise in the past as well as at the present time. Men of thought and action, of initiative ability and marked commercial vision have been identified with this progressive corporation and have stood exponent of the finest type of civic loyalty and public spirit. In connection with the brief outline of the history of the company will be given specific mention of those who have been the founders and builders of the business, and these supplemental articles will show forth the beneficent influence wielded by former and present executives of the company.

The large and modern manufacturing plant of the Bush & Gerts Piano Company is situated at the corner of Weed and Dayton streets, and the industry dates its foundation back to the year 1882, when John Gerts engaged in the manufacturing of pianos in a modest way. A man of marked technical skill and experience, his financial resources were limited, and thus he initiated operations

in a small way, the while he wisely adopted the policy of turning out products of the highest grade, his original factory having been located on North Clark street, near the river. Under the title of the Gerts Company he continued operations in virtually an individual way until 1885, and in the meanwhile he had gained no minor repute for the production of high-grade pianos, his knowledge of the technical details of this line of industrial enterprise having been acquired through a thorough apprenticeship in his native Germany. In 1885 Mr. Gerts formed a copartnership with the late William H. Bush, a substantial capitalist and retired lumber merchant. At this time the factory was removed into a building, owned by Mr. Bush, at Chicago avenue and Clark street. Here, with better facilities, the enterprise was continued on a larger scale and under the firm name of W. H. Bush & Co. Later the title of Bush & Gerts Piano Company was adopted and in 1892 the business was incorporated under the present name, the Bush & Gerts Piano Company, operations being based on a capital stock of one hundred thousand dollars. Later the capital stock was increased to four hundred thousand dollars, and that the concern has become one of the most important of its kind in the west needs no further voucher than the statement that at the present time the capital stock of the company is one half million dollars. The Bush & Gerts Company sells the products of the great Chicago plant to the music trade exclusively and figures as the second concern in this line in the west to adopt this definite policy of production. William H. Bush continued as president of the company until his death, in 1901. Mr. Gerts, whose death occurred in 1913, was secretary and treasurer of the company. To both of these honored citizens memoirs are dedicated in following paragraphs. Of the policies adopted by this company in the earlier stage of operations the following pertinent statements have been written: "This company was the second one in the west to sell its products in a direct way to the piano trade, and, like the Smith-Barnes Company gained in this respect pioneer distinction as working in opposition to eastern manufacturers, who had at the time a practical monopoly in the piano manufacturing business, with the result that it was common to disparage pianos manufactured in the west."

After having occupied the building at Chicago avenue and Clark street for a period of two years the company removed its plant to the McEwin building, corner of Institute place and Wells street, where were obtained more commodious quarters for the prosecution of the rapidly growing business. In 1891 the company purchased the Zangerle factory property, at Weed and Dayton streets, and removed the business to this location, additions having since been made to the building, which is a substantial four-story structure with the best of modern equipment and facilities. The annual capacity of this extensive plant is the production of four thousand pianos, and the sale nearly approaches the capacity mark. The factory affords a floor space of one hundred and eighty thousand square feet and the force of employes is in excess of two hundred and fifty, the output being sold entirely to the piano trade, as in the beginning, and the business now extending into all parts of the Union. As representative of this well ordered policy the Bush & Gerts Piano Company figures as one of the largest and most important in the Union. A subsidiary concern is the Bush & Gerts Company of Dallas, Texas, this being a sales organization incorporated under the laws of Texas and controlling a very large volume of business as jobbers and

retailers of pianos and all other kinds of musical instruments. Upon the death of William H. Bush, in 1901, his son William L. succeeded him as president of the company, an office of which he is still the incumbent. A brief review of his career will be found in an appending article. William S. Miller is vice-president of the company, and its secretary and treasurer is John Gerts, a son of the honored founder of the business.

William S. Miller has been vice-president and general manager of the company for a period of three years and has been an active and important factor in the growth and development of the company since 1894.

JOHN GERTS, Sr.

John Gerts, Sr., founder of the Bush & Gerts Piano Company, gained precedence as one of the foremost exponents of the piano manufacturing industry in the United States, and his life was one of signal honor and large and worthy achievement. He was secretary and treasurer of the company at the time of his death, which occurred May 14, 1913, and well may a tribute be paid to his memory, in connection with the foregoing description of the business of which he was the founder.

Mr. Gerts was born in the province of Westphalia, Germany, on the 4th of September, 1845, a son of John and Maria (Lanfer) Gerts. He was afforded the advantages of the excellent schools of his native land, and in 1859, at the age of fourteen years, he entered upon an apprenticeship to the trade of piano-making, which he learned with the punctilious thoroughness demanded in connection with artisanship in Germany. After completing his apprenticeship Mr. Gerts worked at his trade as a journeyman in Germany until 1870, when he came to the United States and established his residence in Chicago, his age at the time having been about twenty-four years. The young man was accompanied to America by his bride, and they departed from the fatherland on the day of their wedding. Shortly after his arrival in Chicago Mr. Gerts found employment in the factory of the Brunswick-Balke-Collender Company, the well known manufacturers of billiard tables, office furniture, etc., and he continued as an expert mechanic with this concern for several years. Thereafter he was employed by the C. J. L. Meyer Company, manufacturers of office and store fixtures, and still later he was a valued employe in the factory of the Gerald Piano Manufacturing Company, in the plant of which all pianos were at that time made entirely by hand. Mr. Gerts remained with this company until 1882, and in the meanwhile he had served as general foreman of the factory. In the latter part of 1882 he formed a partnership with the two Schaff brothers, uncles of the present executive heads of the Schaff Piano Company, and at this time was initiated the manufacturing of the Gerts piano. Eventually Mr. Gerts purchased the interests of his partners and removed his factory to a building at the corner of Larrabee street and North avenue, where he gave employment to six skilled mechanics and he soon established a reputation and modest sale for his pianos. Later he removed his factory to larger quarters, on Pearson street, and here he began the manufacturing of stencil pianos for the trade, among his patrons

having been Geo. P. Bent, Camp & Company, Julius Bauer, J. Steger and J. O. Twitchell, the names of whom have been prominent in the piano trade. After the late William H. Bush assumed a financial interest in the business removal was made to a building owned by him, at Chicago avenue and Clark street, and from that time forward until his death Mr. Gerts continued the able supervisor of the manufacturing departments of the industry, which grew to be one of broad scope and importance, his career from that time being adequately outlined in the preceding sketch descriptive of the company, of which he was secretary and superintendent at the time of his death. Mr. Gerts was an enthusiastic believer in Chicago and its great destiny and his surplus capital was gradually invested in local realty, besides which he was emphatically loyal and public spirited in his civic attitude,—a man of sterling character and one who commanded unqualified esteem in the city of his adoption. He was a Republican in politics and was affiliated with the Masonic fraternity.

On the 3d of July, 1870, Mr. Gerts wedded Miss Caroline Schwabe, of Hamburg, Germany, and their bridal tour was the voyage to the shores of America, their home being established in Chicago shortly after their arrival. Mrs. Gerts still occupies the attractive family residence, at 626 Gary place, and four children survive the honored father,—Emilie, who is the wife of Fred Huettin; Oscar, who is retired; Frieda, who is the wife of Herman H. Arnold; and John, Jr., who is now secretary and treasurer of the Bush & Gerts Piano Company. Herman H. Arnold, who married Miss Frieda Gerts, is now a director of the Bush & Gerts Piano Company and is superintendent of its factory. John Gerts, Jr., secretary and treasurer of the company, is well upholding the prestige of the family name and is one of the representative business men of the younger generation in his native city. July, 1917, was solemnized his marriage to Miss Grace Jeffers, of Chicago.

WILLIAM H. BUSH

Measured by its rectitude, its beneficence, its altruism and its large and worthy record of achievement, the life of the late William H. Bush counted for much, and Chicago shall ever have reason to pay tribute of honor to the memory of this liberal citizen and influential man of affairs. In a foregoing article is noted his association with the Bush & Gerts Piano Company, and of the same he continued the president until his death, which occurred on the 19th of March, 1901.

Mr. Bush was one of the pioneer business men of Chicago and was one of its well known and specially honored and influential citizens at the time when he was called from the stage of his mortal endeavors. He was born at Fredericktown, Maryland, in the year 1827, and received in his native commonwealth excellent educational advantages in his youth. His earlier business experience was gained in the city of Baltimore, and in 1853, as a young man of energy, ability and ambition, he came to the west and cast in his lot with the progressive little city that was eventually to become one of the world's great metropolitan centers. For a short time after his arrival in Chicago he was identified with the wholesale and retail tobacco business, and he next became associated with Alexander

Johnson and B. F. Hill in the organization of the Bush, Hill & Johnson Lumber Company, which was the largest lumber concern in Chicago at the time of the great fire that swept and devastated the city in 1871, the plant and stock of the company being entirely destroyed in this memorable conflagration. After the fire Mr. Bush continued actively and successfully in the lumber business, and through the medium of the same recouped effectively the losses that had been his in the great fire. He had established soon after coming to Chicago one of the first commission houses on South Water street, and this he conducted about twenty years, his versatility as a business man being on a parity with his decisive energy and progressiveness.

In 1875 Mr. Bush erected a large two-story building at the corner of North Clark street and Chicago avenue, his intention being to establish here a general market, similar to those in the east. Mr. Bush found this plan inexpedient and finally transformed the most of the building into stores. He developed also a prosperous business in the meat-packing industry, which he continued seven years, with headquarters on the site of the present magnificent Bush Temple of Music, a building that was erected in accordance with provisions made by him, by his sons William L., and Benjamin F. Mr. Bush was active also in the real-estate business and acquired many valuable holdings, through the improvement of which he aided greatly in the rebuilding of Chicago after the fire of 1871.

In 1885 Mr. Bush was induced by his son William L., who had in the meanwhile become active in the piano trade, to give capitalistic support to the piano manufacturing business founded by the late John Gerts, and thus was initiated his association with an industrial enterprise that is now one of the most important of its kind in Chicago, the article descriptive of the company giving adequate data relative to his connection therewith and he having continued as president of the Bush & Gerts Piano Company until his death, at the age of seventy-three years.

A man of high ideals, broad circumspection and generous impulses, Mr. Bush was earnest and liberal in the support of all worthy movements projected for the general good of the community, and he is to be remembered and revered as a true philanthropist. He and his wife were most zealous and devoted members of Grace Methodist Episcopal church, of which he served many years as deacon and a trustee. The Methodist Old People's Home at Edgewater owes its existence primarily to the generosity of Mr. Bush, whose first donation, in the sum of thirty-five thousand dollars, made possible the erection of the beautiful Bush Hall, the nucleus around which has been developed the fine institution of the present day, the same providing accommodations for two hundred and fifty aged dependents and the work instituted by Mr. Bush in the developing and support of this noble home having been effectively carried forward and supplemented after his death by his son William L. Mr. Bush was the implacable adversary of the liquor traffic, active and influential in temperance work, and in 1886 he was the Prohibition candidate for the office of mayor of Chicago. He gave liberally to the support of the Frances Willard Temperance Home and was an active member of Civil Federation of Chicago and the local organization of the Society for the Suppression of Vice.

In 1847 was solemnized the marriage of Mr. Bush to Miss Mary Jane Brunt, daughter of Ralph Brunt, of Baltimore, Maryland, and their ideal companion-

ship was severed only by his death, Mrs. Bush having survived her husband by about four years and was seventy-six years of age at the time of her death,—September 22, 1905. Of their eight children only two are living,—William L., of whom specific mention will be made in an appending article, and Benjamin F., who is a retired business man and substantial capitalist of Chicago, where he has been a prominent figure in the Christian Science movement, he being the elder of the two sons.

WILLIAM L. BUSH

William L. Bush, president of the Bush & Gerts Piano Company, an office in which he succeeded his honored father, is a man whose loyalty to his native city has been manifested along divers and benignant channels, and he has done much to further the civic and material advancement of Chicago,—a man of fine ideals that have been expressed in worthy achievement and one whose influence has been potent not only in connection with industrial enterprise of broad scope but also in the promotion of those things that make for social progress and well being. Mr. Bush is, perhaps, best known to Chicago citizens in general, as the promoter and builder of the beautiful Bush Temple of Music and the virtual founder of the admirable musical conservatory and school of acting that have headquarters in this building. In the foregoing memoir dedicated to his father appear data that indicate the large and fortifying influence which the Bush family has exerted in Chicago during a period of more than sixty years.

William Lincoln Bush was born in Chicago on the 3d of March, 1861, and is the younger of the two surviving sons of the late William H. and Mary J. (Brunt) Bush. His early educational advantages were those afforded in the public schools, and his broad and varied experience and mental receptiveness have combined in later years to make him a man of fine intellectuality and mature judgment. In 1877, as a youth of sixteen years, Mr. Bush initiated his active association with business affairs by taking a position in the employ of George Woods & Company, manufacturers of pianos, at Cambridgeport, Massachusetts. Here he gained valuable experience in connection with factory operations and the commercial phases of this line of enterprise, and it is significant to note that at the present time he is the president of one of the large and important piano-manufacturing corporations of the United States, his association with this line of industrial enterprise having been consecutive during the long intervening years. He gave two years of careful study and work pertaining to the exterior construction of pianos, and became an authority in this feature of the business. He finally became a traveling salesman for the company mentioned, and in 1879 he returned to Chicago and assumed a similar position with the W. W. Kimball Piano Company, his service in this capacity continuing two years. At the expiration of this period Mr. Bush became financially interested in the Vanderpoel Company, which had the distinction of being the first concern to introduce the electric arc light in an industrial and commercial way. He became treasurer of this company and incidentally had the supervision of the installation of the first public arc-lighting system in Chicago. His desire to continue his association with piano manufacturing led him finally, after having been identified also with a

commission firm of the Chicago Board of Trade about two years, to obtain the capitalistic co-operation of his father and to form a partnership with John Gerts in the manufacturing of the Bush & Gerts piano, the enterprise having been conducted under the title of W. H. Bush & Company from 1885 to 1889, when incorporation was effected under the present name, the Bush & Gerts Piano Company. He held the office of secretary of the company until 1902, when, upon the death of his father, he succeeded the latter in the office of president of the company, his service as chief executive having continued since that time, besides which he is president also of the Bush & Gerts Piano Company of Dallas, Texas. As the founder and treasurer of the Bush Conservatory of Music and Dramatic Art, Mr. Bush has been in the most significant sense the patron of the fine arts, especially music and the drama, and from the Bush Temple of music and dramatic art have gone forth many who have attained to distinction in the musical and dramatic world. The magnificent Bush Temple was erected by the Bush Estate with provisions made by his father, and the building contains also the Bush theater or auditorium, one of the foremost centers of musical and dramatic art in Chicago, the same having been dedicated in 1903 and Madame Schuman-Heink, the great contralto, who appeared on the dedicatory program, pronounced the acoustics of the auditorium the best of all the innumerable public assembly rooms in which she had appeared in the course of her professional career. Mr. Bush is deeply interested in all forms of musical art and gives liberal support to the promotion of the same in his native city. He was an honorary member of the Mendelssohn Club of Chicago. The Bush & Gerts Piano Company has membership in the Chicago Association of Commerce, the National Chamber of Commerce, the Illinois Manufacturers' Association, the National Piano Manufacturers' Association.

In politics Mr. Bush is found staunchly aligned with the Republican party; he is affiliated with the Masonic fraternity, including the Mystic Shrine. He served as president of the Marquette Club from 1901 to 1903, and since its consolidation with the Hamilton Club has been a member in the latter. He is identified also with the Illinois Athletic Club, the Chicago Press Club and other representative civic organizations, the while both he and his wife are prominent and popular figures in the social life of Chicago. Mr. Bush was brought up in the Grace Methodist Episcopal church and Mrs. Bush is a communicant of the Protestant Episcopal church.

Mr. Bush was instrumental in the drafting of a bill that was introduced in congress of the United States, the same prescribing that all manufacturers of pianos be compelled by law to apply their names and brands upon all of their manufactured products, thus eliminating the abuse that has grown all too common in the sale of pianos to the public, stenciled marks with specific names of dealers giving no definite assurance of values to the purchaser. In this connection it is interesting to record that the Bush & Gerts Piano Company conducts its business along lines representing an absolutely square deal for the piano purchaser and upon a strictly non-stencil basis. The pamphlets of which Mr. Bush is author have had a wonderfully extensive circulation and have exerted great influence in raising the commercial ethics of the piano trade.

On the 12th of November, 1894, was solemnized the marriage of Mr. Bush to Miss Pearl E. Barrow, daughter of William and Ellen (Wilcox) Barrow, of Chicago, and they reside at the Plaza Hotel.

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